

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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Flight.

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EDITORIAL COMMENT.

Aircraft in the World-War.

The whole of the vast area covered by the warlike operations of the Great Powers is enveloped in the fog of war, and until that fog is dissipated by the wind of a decisive battle we are not likely to hear anything that will serve to enlighten us on the details of how decisive results are being aimed at. That is most absolutely correct under the circumstances. It may be hard for those of us who are left at home to carry on the nation's business to sit down day by day, knowing that things are happening beyond the sky-line—things that are shattering the civilisation of the world to fragments, things that will undoubtedly change the map of Europe and will relegate Powers that are now properly described by the adjective "Great" to a position of comparative obscurity out of which they cannot possibly emerge for many decades, if ever. The issues are enormous, and we who will ultimately be affected by them can do nothing but sit passively and await the news of how prospers our cause. We would have news of those who are fighting and dying for us; we are anxious as citizens to know whether the grim work of war goes with or against us, but we are not told, and we may not be told until the issues are decided one way or the other. It is, we repeat, hard, very hard, but we realise that it must be, and therefore do not complain, but are content to sink the impatience of the individual in the calm judgment and firm anticipation of the loyal citizen.

All the circumstances being as they are, it would be quite futile to write of the part being played and to be achieved by aircraft. Not a scrap of dependable news has come through regarding the doings of the respective air fleets of the belligerents. It seems fairly certain that the first attempt of the Germans to use the much-vaunted Zeppelins resulted in a ghastly failure, inasmuch as one of these craft which took part in the battles around Liège is said to have been brought down by gun-fire before it had had time to do any material damage to speak of. These reports must, of course, be accepted with all reserve until the fog has lifted, and the exigencies of war allow of some fuller news than we are likely to get at present being disseminated. Moreover, it does not at all follow that even if the first attempt failed, these huge craft are useless, though we do believe that in the face of an enterprising enemy, well provided with aeroplanes, and the devoted men to fly them, their usefulness will be far more circumscribed than the German Staff appears to have thought. But in this war, which was begun and continues its progress in an atmosphere of miscalculation and false presumptions, we shall not add our own minor errors to the sum by laying down any dogmatic opinions as to this.

Then, with regard to the employment of aeroplanes, we know absolutely nothing, save that they have been reported as flying over certain places within the theatre of operations. Of whether they have actually achieved any results of value we remain utterly ignorant. Shortly after the outbreak of the war, we were regaled with a story of how Garros had sacrificed himself for France by flinging himself and his machine straight at a German airship, involving the enemy and himself in an inevitable common ruin. We doubt not that Garros and all his fellow French aviators would act thus were it necessary, as equally we are confident that our own flying officers would act precisely in the same way, but so far as this moving story is concerned it has one quite sufficient demerit—it is not true. Again, we read that "it is believed" the French aviators are continually flying over the advancing Germans, making known to their own commanders the numbers, line of march and apparent intentions of the enemy. But we do not hear a word of what counter-movements are being made by the splendid personnel of the German air service, though we cannot believe that they are remaining quiescent, skulking in their hangars, as their Navy is doing behind the shelter of

the forts of Wilhelmshaven and Kiel. We may be sure they are up and doing somewhere, and that they will be heard of to some purpose before the impending great battle is joined.

On Tuesday morning the *Daily Mail* correspondent in Paris reported that it was officially announced that much fighting had occurred round Longwy, and that a severe action had been fought near Mulhausen, adding the note that "Aeroplanes, manœuvring under heavy fire, played a large part in the action." Anything more unsatisfying to the anxious student it would be hard to imagine. Not a word to enlighten us as to whose aeroplanes these were, or what the results of their work! And yet, as it is, we would not have it otherwise. We must wait and see. It may not be until the end of the war and when the official histories come to be compiled that we will really know. But although speculation of a specific kind is quite useless, we may be certain in a general way that most important use is being made of aircraft, both dirigibles and aeroplanes, by all the immense forces which are involved. That much at least we gather from the shreds of information that leak through from the front.

At home here we are anxious to know what is the value of our seaplanes. Are they being used and how? Have they justified the hopes of our naval commanders or exceeded them? That they should fall short we

cannot imagine. Have they obtained contact with the enemy? All these things we would know and more besides, but it cannot be—yet. We must possess our souls in patience, hoping, believing that when at last the screen is lifted we shall see what we so ardently desire—the vision of duty unflinching done, duty which will have helped to secure for all time the glory and safety of the Motherland, and Peace for the entire world.

In a well-considered leader in the *Daily Telegraph*, the following high tribute to the importance of aircraft is made. A greater incentive to see that at all costs Great Britain shall be supreme in the air could hardly be perused:—

"The German plan is clear. It is also unalterable, now that matters are so far advanced. Everything is being staked upon the success of a movement, in enormous strength, through the neutral territories of Luxemburg and Belgium. A definite assurance of this is, we need scarcely point out, of priceless advantage to the French and their allies. They know where the main strength of the enemy is massed, and what its intention is; they even know approximately what numbers and what sort of troops are being brought up against them on the ascertained line of advance. No defence could ask more. That they enjoy this knowledge is undoubtedly due in the main to the flying men. For some years past it has been plainly demonstrated in peace manœuvres that the air service, well conducted, makes secrecy in regard to the concentration of troops impossible. In modern conditions an impenetrable screening of an army's disposition of force, such as the German cavalry effected in 1870, is no longer feasible."



ROYAL FLYING CORPS.

ARTISANS AND OTHER TRADESMEN WANTED.

THE following notice was posted outside the War Office on Monday afternoon:—

"The Royal Flying Corps, Military Wing. Special enlistment of tradesmen for one year, or the duration of the war. Men of the following trades are urgently required: Blacksmiths, cable-joiners, carpenters and joiners, clerks, coppersmiths, draughtsmen (mechanical), drillers, dynamo attendants, electric bell fitters, electricians, engine testers, fitters, instrument repairers, joiners, metal joiners, motor fitters, painters, pattern makers, photographers, plumbers, riggers, sail makers, switch-board attendants, tinsmiths, tool grinders, turners, wheelwrights, whitesmiths, wireless operators, wiremen, wood turners.

"Men who have served as apprentices or improvers in a general mechanical engineering workshop, and in addition have served at full rate in a petrol motor engineering works, including experience in the engine test shop, or have served as aeroplane mechanics. They should have a good knowledge of general motor engineering and a thorough knowledge of the principle of magneto and coil ignition, and be able to make intelligible sketches of machinery details, and rough calculations connected therewith.

"Pay varies according to trade, from 4s. to 7s. 6d. per day, all found. Applicants for enlistment should apply in person to the Craig's Court entrance of the Central London Recruiting Depot, or to the Officer Commanding the Military Wing, Royal Flying Corps, Farnborough, Hants, and must be prepared to furnish certificates of character, of previous trade experience, and of present trade qualifications."

The response to this appeal was so great that on Wednesday night it was announced that further recruiting for the Royal Flying Corps was suspended until further notice. So many applications had been received that it was impossible to reply to them all individually.



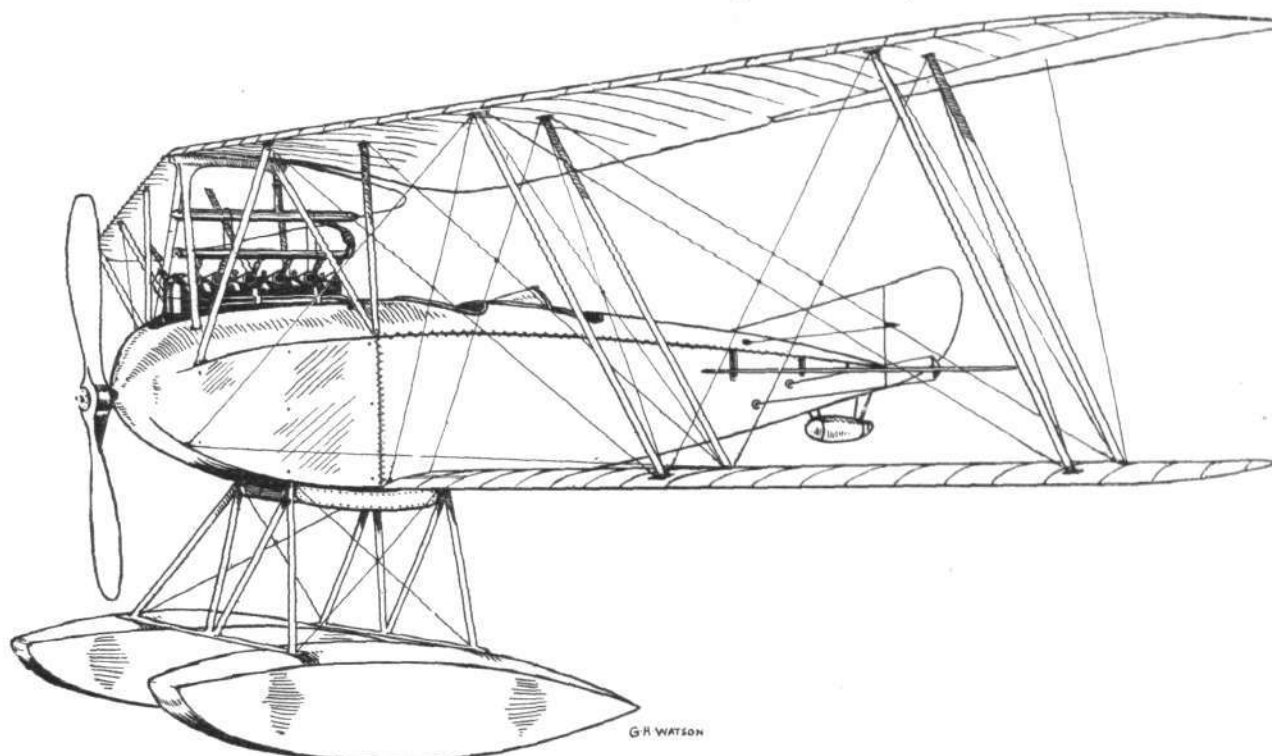
"L'EFFORT VAINQUEUR."—A beautiful work of art by a young artist, Mlle. Lona Zamboni, at the French Ecole des Roches, emblematical of the conquest of the air by man.

THE "ROUND BRITAIN" MACHINES.

WE continue this week the illustrated description of the machines entered for the Circuit of Britain, with the British-built

Beardmore "D.F.W." Tractor Biplane, which has been officially numbered 2 in the race. This machine is very similar to the one which established a

by means of acetylene welding. Diagonal cross-bracing completes the internal construction of the *fuselage*, which is of enormous strength, both as regards torsional and bending stresses. In the nose of the *fuselage* are the supports for the engine—a 120 h.p. British-built Beardmore Austro-Daimler—which are also made of steel. A hemispherical nose-piece of aluminium covers the front



ROUND BRITAIN MACHINES.—No. 2.—The British-built Beardmore-D.F.W. (120 h.p. Beardmore-Austro-Daimler (British-built) engine) tractor biplane.

new world's altitude record lately, by going up to a height of 26,568 ft.

Aerodynamically, the new D.F.W. biplane, constructed by the great British armament firm of Wm. Beardmore and Co., is chiefly remarkable for its good streamline *fuselage* and back-swept wings, and constructionally it is interesting on account of the fact that it is built of steel

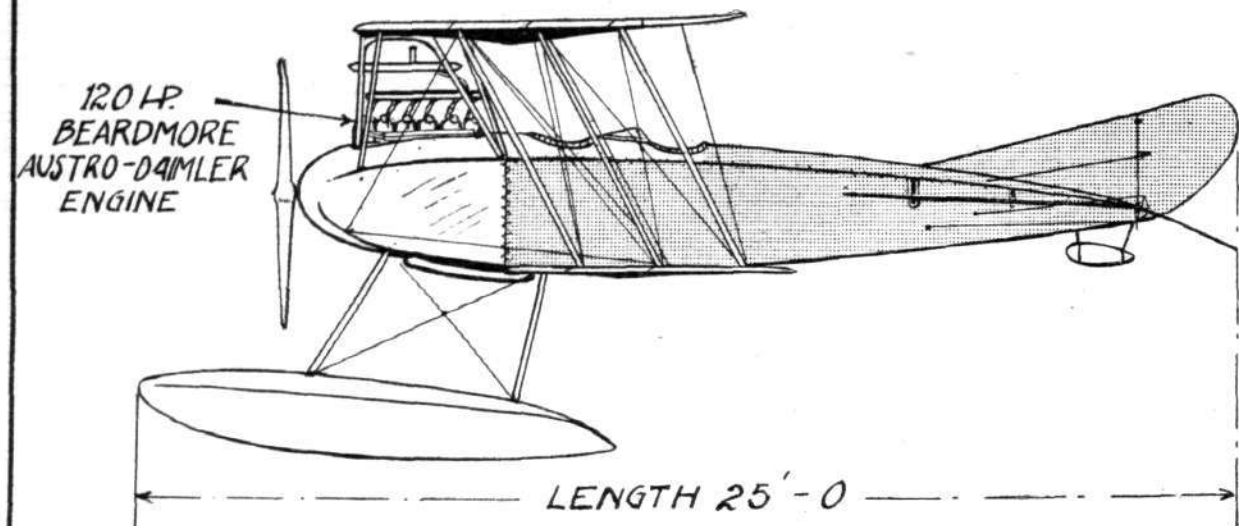
part of the body, the sides of which are covered with the same material up to the rear inter-plane struts. From this point to the stern the *fuselage* is covered with fabric laced on. An aluminium turtle back, made out of a single sheet, and having openings cut out for the engine and pilot's and passenger's cockpits, gives the top of the *fuselage* a particularly good streamline.



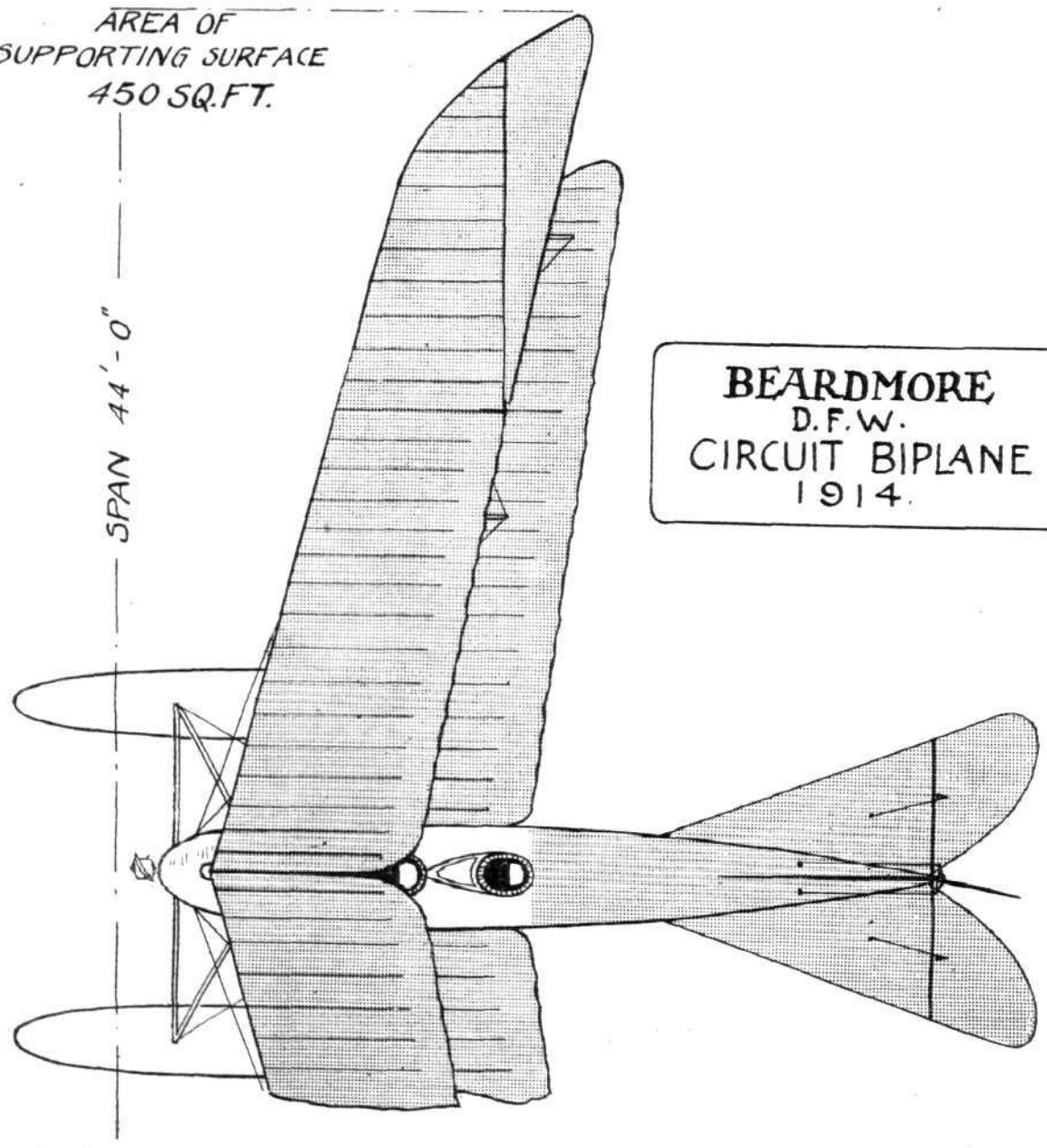
THE ROUND BRITAIN MACHINE No. 2.—Another sketch from behind of the British-built Beardmore D.F.W. tractor biplane.

practically throughout. The *fuselage*, which is of rectangular section, is built up of four *longerons* converging towards the rear, where they meet the rudder post and forming, in the nose of the machine, an exceptionally good entry for the air. Struts and cross members made of steel tubing connect the four *longerons*, to which they are secured

The main planes are, as we have already pointed out, of the back-swept or arrow type, and are in addition heavily staggered. The upper plane, which is of slightly greater span than the lower one, is made in two sections joining in the centre to a cabane of the monoplane type consisting of four struts of streamline steel tubes resting



AREA OF
SUPPORTING SURFACE
450 SQ. FT.



THE "ROUND BRITAIN" MACHINES.—No. 2. The British-built Beardmore D.F.W. biplane. Plan and side elevations, to scale.

with their lower ends on the upper *longerons* of the *fuselage* and carrying at the top a horizontal member to which the two sections of the upper plane are secured. The inner ends of the spars of the lower plane are attached to the lower *fuselage longerons* by means of quick release devices.

Two pairs of steel tube struts on each side connect the main planes and by means of a special lever on the lower end of the struts these can be dismantled in a few minutes without interfering in the slightest with the bracing cables, so that no tuning up is necessary every time the machine is erected. The saving in time thus effected should be of the greatest value in a military machine.

Although the D.F.W. biplane is practically inherently stable laterally *aileron*s are fitted to the outer extremities of the planes. These *aileron*s are of triangular shape and have a negative or reversed camber. In normal flight they therefore are slightly negatively loaded, thus tending to increase the lateral stability of the machine. They are operated by means of cables passing round a drum on the control wheel. The latter is mounted on a vertical column, which is free to move in a forward and backward direction and to which are attached the elevator control cables. Steering is effected in the ordinary way by a pivoted foot bar.

The pilot's and observer's quarters are most comfortable in addition to affording an exceptionally good view in practically all directions. The seats themselves are made of aluminium and are of the bucket type, well upholstered with leather. The front seat is occupied by the observer, who is placed sufficiently far forward to be able to look out over the leading edge of the lower plane. The rear seat, on the other hand, is situated so far back that the pilot obtains an unrestricted view in a

downward direction, which is of course of great advantage for alighting on the sea.

The tail planes are of the usual type and consist of a flat stabilising plane, the angle of incidence of which can be varied, although not during flight as in previous D.F.W. machines. To the trailing edge of the stabilising plane is hinged the divided elevator, whilst to a continuation of the stern post is hinged the rudder. A small fixed vertical tail fin is fitted. A small egg-shaped metal float supports the tail planes when the machine is at rest.

For the race round Britain a float chassis was, of course, fitted, but a land chassis can be very quickly substituted should it be desired to use the machine for overland flying. The float chassis consists of two sets of struts made of streamlined steel tube. Both sets are in the form of the letter "M," as seen from the front, and the lower extremities of the struts are connected by a transverse tube to which the floats are attached. The upper ends of the front set of struts join the lower *longerons* of the *fuselage* immediately under the engine, whilst the

rear struts join on to the lower *longerons* at the point where are attached the front spars of the lower main plane. The radiator occupies a rather unusual position in being mounted underneath the *fuselage* between the chassis struts. Bosch ignition and self-starter is fitted, so that it is possible to start the engine from the pilot's seat without any necessity for swinging the propeller. The weight of the machine empty is 1,500 lbs., and a speed range of 45 to 85 miles per hour is expected. It is anticipated that the climbing capabilities of the machine will be at the rate of 3,500 ft. in 6 mins. with a load of 125 lbs. in addition to pilot and observer and sufficient petrol, oil and water for six hours' flight.



Lieut. C. H. Collet, who was to have piloted the British-built Beardmore D.F.W. tractor biplane in the Round Britain Race.

Fatal Accident at Salisbury Plain.

It is with profound regret that we have to record the accident which occurred at Netheravon on Wednesday morning last, resulting in the deaths of Second Lieut. Robin B. Skene and Air-Mechanic R. K. Barlow. At the inquest held the same day, the evidence went to show that the machine, through being banked too strongly when making a left-hand turn, fell to the ground from a height of between 150 and 200 ft. A verdict of "accidental death" was returned.

Lieut. Skene, who qualified for his *brevet* on July 21st, 1913, only recently joined the Royal Flying Corps as a Special Reserve Officer, but it will be recalled that he has done a good deal of flying at Brooklands, &c.

The Naval and Military Engine Competition.

It has been officially announced by the Secretary of

the War Office that the Naval and Military Aeronautical Engine Competition is now closed, and that the results will be published shortly.

Mother Ship for Seaplanes.

It is announced that the mother ship for seaplanes, which is now being constructed by the Blyth Shipbuilding Co., is to be named the "Ark Royal."

Competitions in France.

At a meeting of the Committee of the Aero Club of France on the 6th inst. it was decided that all national and international competitions should be postponed *sine die*. Further, it was resolved that the closing date for all competitions which have been postponed should be extended by a period corresponding to that from the first day of mobilisation to the end of the war, so that all pilots may stand an equal chance in the contests.

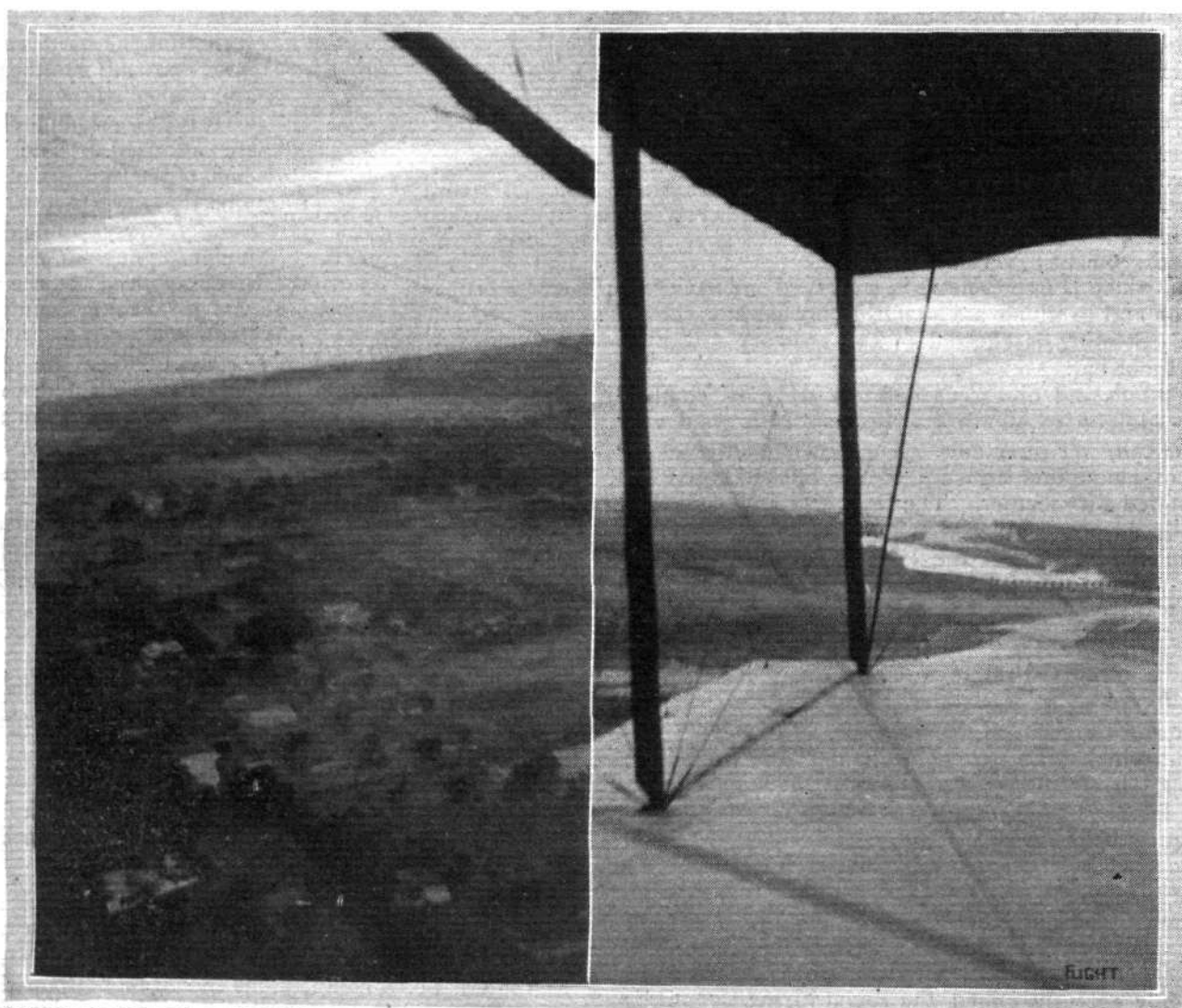
LAW RELATING TO AIRCRAFT IN WAR.

By one of those coincidences which occasionally occur, we have received Dr. Spaight's recently published work on "Aircraft in War" at a time when this country has become involved in what is likely to prove the most terrible conflict that has ever been since the world began, and in which aircraft will undoubtedly play a great part.

The author, who is a well known authority on International Law, deals exclusively with the subject so far as it relates to the status of aircraft in war—which, despite the attention it has received from various eminent Jurists in this country and on the Continent, is still far from definite. Moreover in many respects, in the opinion of Dr. Spaight it is defective. In this volume he has critically examined the various codes that have been formulated, particularly that of M. Fanchille—the full text of which are given, with other matter, in the form of appendices—in an exceptionally lucid and practical manner, free from legal phraseology. The author has suggested certain modifications, which are embodied in a draft code of rules in an appendix, that are intended to eliminate such defects and obscurities as at present exist. Whether the experience gained during the present war will be such as to render further extensive alterations

imperative, it is impossible, at this early stage, to say; but the arguments with which the author supports his contention leave no room for doubt that the matter is one that should be fully gone into at the earliest possible moment by all the Powers concerned.

Nevertheless, we are, in the main, disposed to agree with Dr. Spaight in his remark that "questions connected with the use of aircraft in war are new and constantly changing with the progress of flight," and hence it is a matter of impossibility to secure finality in any set of rules that may be formulated. Apart from this aspect of the question, the part that aircraft will play in war is, at the moment, altogether too hazy and speculative to render it possible to dogmatise upon the subject; and what is of still greater importance is the fact that evidence is unfortunately not lacking, even at this early stage of the war now in progress, that the question of right will, in some cases, be governed largely, if not entirely, by expediency, rather than by the tenets of International Law. We recognise that all war is barbarous and brutal and the possibility of the use of aircraft has accentuated these qualities in no small degree. It is the object of the commander of an army to annihilate his



THE "CITY OF DISTANCES," AS MADRAS IS CALLED.—Photographs taken by Mr. Wilfred R. Wills, from Mr. Madeley's Maurice Farman biplane, of the residential quarter of Madras at 6.45 a.m. Each house has a large compound, and the town covers a very large area. The Ghosha people came on to their roofs in numbers to look at the aeroplane when it dropped to 300 ft. The photograph on the right was taken at 1,000 ft. On the left is seen the mouth of the Adzar river looking towards the sea. This was taken at 7.15 a.m., the best time for flying except sometimes in the evening.

opponent as speedily as possible—he dare not be too squeamish—and where the rules governing it are so elastic and where such differences of opinion exist between the Great Powers, many acts will be countenanced that should raise the indignation of the civilised world. But we will not go so far as to admit that—

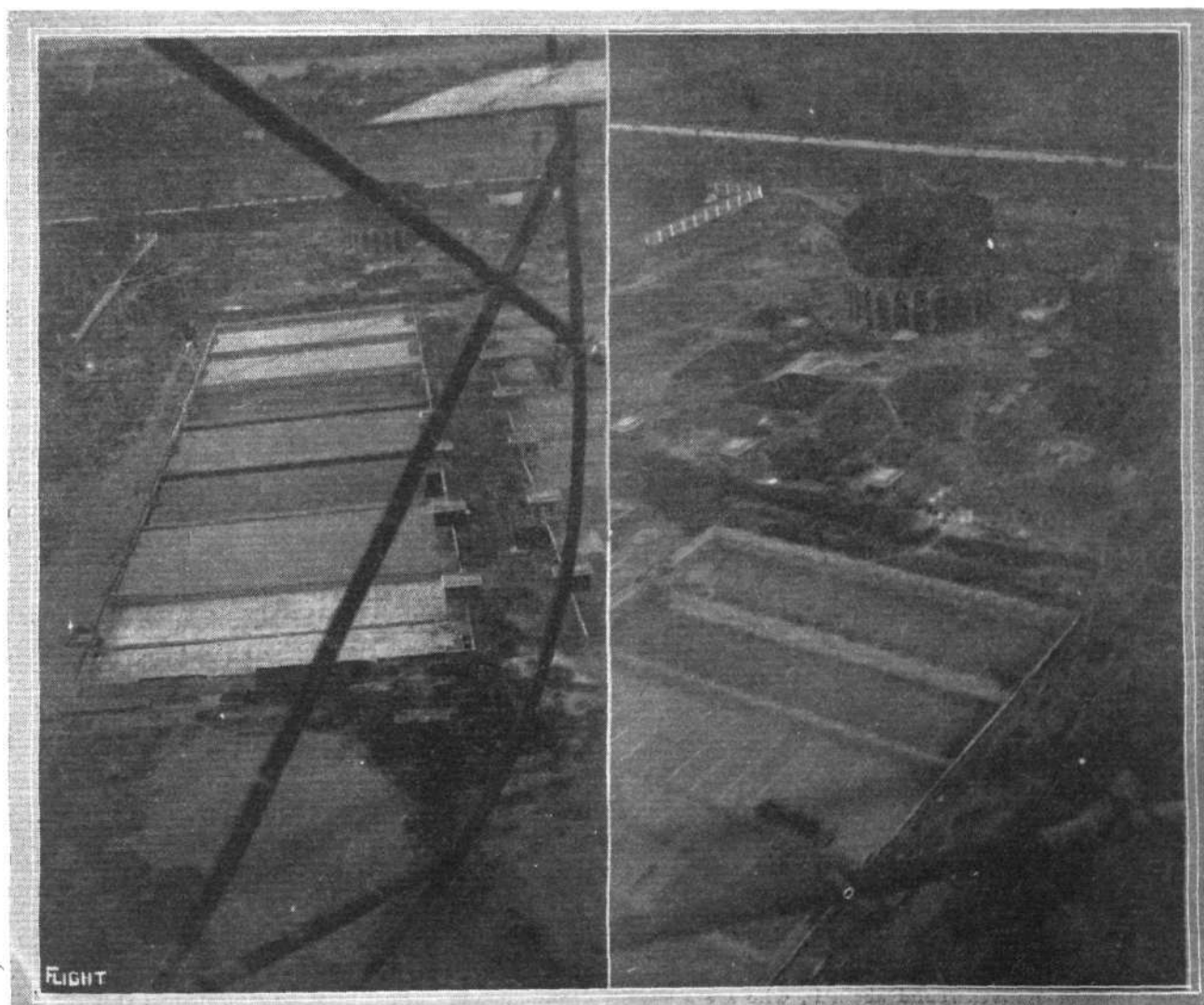
“The test of the legitimacy of any engine of war is, in the end, its effectiveness; if the results which it achieves are sufficiently great to be regarded as justifying the incidental suffering of its victims, if its “bag” is large enough, then the conscience of the world has no difficulty in approving its use.”

The space at our disposal renders it impossible to more than briefly refer to the subject matter of the volume, and we will, therefore, confine our attention to three points dealt with by Dr. Spaight, and which are to us of supreme importance and intense interest at the present juncture. These relate to (a) the aerial attack of towns and cities, (b) the passage of aircraft over neutral territory, and (c) the treatment accorded to private aircraft.

The discharge of projectiles or explosives from aircraft on undefended towns is a contingency which we have to face, as notwithstanding the prohibitions embodied in the Declaration at the Hague Convention, the signatories to the agreement were only Great Britain, the United States, Austria, Belgium, Greece, Norway, Holland, Portugal,

Switzerland and Turkey, and these countries are only bound in wars between themselves, and would be free to avail themselves of this mode of attack against a non-signatory Power, or when allied to a non-signatory Power; but even in war between the countries mentioned, the susceptibility to, or the immunity from, attack from aircraft enjoyed by a town or city apparently depends in part upon the question as to what constitutes a defended town. According to Article 25 of the Hague *Règlement*, the bombardment of undefended cities, towns, villages, &c., is forbidden, but in the Convention on Naval Bombardments, which Dr. Spaight believes will be applicable to aerial warfare, any works which can be utilised for the needs of the hostile army or fleet—*materiel de guerre*—may be destroyed by artillery. This heading, it may be presumed, would embrace harbours, docks, and railway stations, in addition to warlike stores, military establishments, &c., and it would, therefore, appear that an aircraft is quite within its legal rights in attempting their destruction—if in so doing some other portions of the towns in which they are located are damaged, past experience in land bombardments has shown that there can be no redress—“the sufferings of these residents are but an unfortunate incident of the execution of an approved act of hostilities, and complaint is useless.”

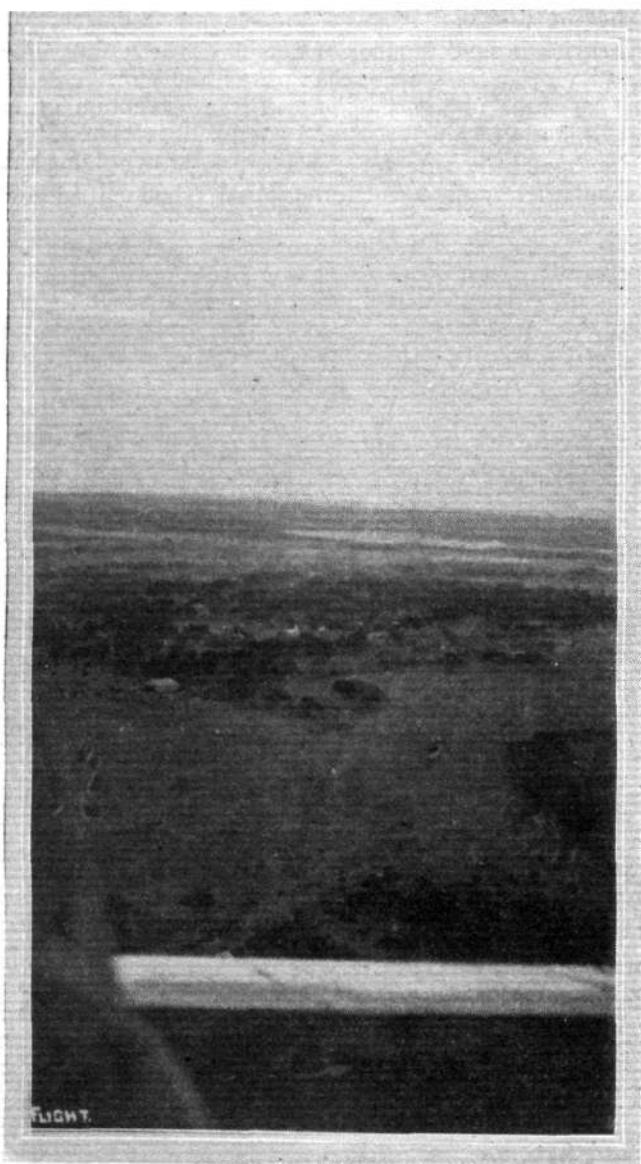
Dr. Spaight is, therefore, probably right in holding that the only deterrents against the aerial attack of London



MR. MADELEY'S NEW WATERWORKS SCHEME FOR MADRAS.—The filter beds and the round elevated tank can be clearly seen in these photographs, which were secured by Mr. Wilfred R. Wills from Mr. Madeley's Maurice Farman biplane. Mr. Madeley is Special Engineer to the Corporation of Madras.

would be the odium to which such an act would give rise, and the fear of reprisals; and as in practically all important coast towns there is a harbour of some description, while all large towns have a railway station, similar remarks would appear to apply to practically any great centre of population in the world.

The effectiveness of bomb-dropping has, however, yet to be proved. As we go to press we read of attacks upon towns on the Continent taking place; but the damage done, as in the Balkan War, is so far comparatively slight and no fatalities have resulted. The influence of such a mode of attack will, probably, be felt mainly in its moral effect upon the inhabitants; and this will be minimised, as the meagre results of past attempts at the destruction of towns in this manner become more widely known. The essential work of the aeroplane, at the moment, is strategical and tactical reconnaissance and observation, although, incidentally, more or less extensive fighting in the air will doubtless take place.



Another photograph by Mr. Wilfred R. Wills from Mr. Madeley's Maurice Farman biplane, taken, like the rest of Mr. Wills' photographs, with an ordinary Kodak. The above snap was taken during a *vol plané*, Mr. Madeley's hangar being seen just to the left-centre of the picture. Note the crowds of natives round about it, who are a very great nuisance when landing, as they insist upon running towards the machine. The spot is the "Mount," a military station six miles from Madras, where Mr. Madeley keeps his machine.

As regards the passage of aircraft over neutral territory Dr. Spaight considers entirely fallacious the principle that the air is free to all, on the ground that it is incompatible with the doctrine of the right to national self-preservation, even when the element of height is introduced by prescribing the minimum elevation at which an aircraft may fly. Although we are opposed to the imposition of any unnecessary restrictions on free aerial navigation, it must be acknowledged that within certain areas it would be unwise on the part of any country to permit promiscuous flying. So that once it is admitted that a nation is justified in prohibiting the navigation of aircraft, it necessarily follows that sovereign rights in the air are vested in that country, and hence the passage of belligerent aircraft over neutral territory violates the neutrality of that country. Further, if such rights are necessary in times of peace, they become doubly so in time of war, and extend over private as well as military aircraft.

Germany, therefore, by permitting her aircraft to pass over Belgium prior to the commencement of hostilities against her, was guilty of an unfriendly act. Similar facilities had never in previous wars been claimed or recognised as permissible in the case of land forces, until Germany made its recent demands upon Belgium. And Holland would appear therefore to have been amply justified, according to custom, in detaining the two Belgian officers who descended with their aeroplane at Roosteren on the 5th inst. Instances of crossing frontiers have occurred during times of peace, notably in France, Germany (between whom there is a special agreement) and Russia. Several cases have been reported where Russian soldiers have fired upon such trespassers. So far as prohibited areas and failure to give notice of the intended journey are concerned, such trespass has also taken place in this country. But the reasons advanced by those responsible for their presence upon foreign soil—*force majeure*, insufficient fuel or ignorance of the locality—have until the outbreak of war secured their release as an "act of grace."

We, therefore, see that sovereign rights in the air are already acknowledged as existing, and these are logically based upon the mutual appreciation of the fact that indiscriminate flying would under some circumstances be to the detriment of the country over whose territory such took place. For a country to surrender its rights, even during times of peace, is altogether impossible. It remains for Jurists, therefore, to secure sufficiently ample facilities for the passage of aircraft engaged in purely non-military pursuits at all reasonable times.

This naturally raises the question of all private aircraft and airmen in time of war. At the present time neither aeroplanes nor skilled pilots are so plentiful as to be of negligible value to the country to which they belong—given an airman and a machine, and we have, potentially, at least, a combination that can be directed against an enemy. Hence, should civilian aircraft enter the sphere of operations for any purpose, it may be assumed that the enemy is justified in regarding such machines as a possible source of leakage of information to their opponents, and in resorting to such measures as will ensure that such information is not imparted to them.

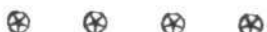
Dr. Spaight's code provides that private or neutral aircraft may be fired upon in three cases, namely, (1) if they engage in hostilities or espionage, (2) if they disobey a signal to land, and (3) in very special cases where imperative military necessity precludes any possibility of giving such a signal.

It cannot be denied, however, that apart from the question of the high speed of aircraft, there is a great difficulty in transmitting signals to machines in flight, and in determining whether or not an aircraft has been guilty of a hostile act. Furthermore, it is even now practically impossible, except in a few cases, to distinguish between private and military aeroplanes, and between those belonging to different Powers; but the exigencies of war do not permit of any risks being taken by either side, so that, in order to avoid complications and danger, it is essential for all private and neutral aircraft to refrain from entering upon the theatre of war. An incident which illustrates this point is reported as having occurred at Liège on Thursday last week. During the attack upon the town, two pilots were sent up by the Belgians, and were immediately fired upon by the enemy; but to the sur-

prise of the airmen the outer forts round Liège also attacked them!

Special regulations have recently been put into force in this country, having regard to the state of war existing, prohibiting flying by private aircraft under any conditions excepting within a limited distance of a recognised aerodrome, and such a rule is excellent in that it safeguards not only the country in which it applies, but also those who might be tempted to engage in flying.

Having very briefly referred to certain aspects of the law relating to war—the subject is too wide and admits of too much discussion to be dealt with fully here—for fuller information we would refer our readers to Dr. Spaight's excellent and well-matured treatise, which is available at a price that places it within the reach of all who are really interested in this side of aviation.



AIRCRAFT IN ACTION.

It is still practically impossible to get any reliable details as to the part which is being played by aircraft in the present war, as so many of the reports received are altogether untrustworthy. The alleged exploit of Garros in ramming a Zeppelin, which has since been shown to be false, may be cited as an instance. Almost every form of aerial attack has been reported as having actually taken place—bomb-dropping from airships and aeroplanes, the ramming of airships and aeroplanes by aeroplanes, rifle and pistol fire between aeroplanes, gun fire and rifle fire from the ground, &c.—and in the majority of cases it is claimed that the attacks proved successful. Hence all reports of this character must be regarded as open to considerable suspicion until confirmed from reliable sources. In passing, however, it may be noted that the reason advanced by the German Ambassador in Paris for the outbreak of hostilities between Germany and France was that a French airman had dropped bombs from an aeroplane in the neighbourhood of Nuremberg—a town which is some 240 miles from the nearest point on the French frontier!

Apparently the first event of a hostile character occurred on Monday, the 3rd inst., at Lunéville, a town on the border of France, at which a Zeppelin landed in April of last year. A German airman was reported to have dropped three bombs from a height of 4,500 ft. on the town, doing material damage only—no casualties resulting therefrom—despite the fact that all fell within the business portion of the town. On the same day, rumours were freely circulated to the effect that Garros had lost his life in ramming a Zeppelin, only later to be proved utterly false. It is, however, well known that a number of French aviators have resolved to carry out this exploit if necessary, and in this connection it may be recorded that M. Michelin has offered to M. Poincaré a sum of 1,000,000 francs (£40,000) to be utilized in rewarding the airmen who accomplish the most heroic acts during the war. The rewards will be limited to 100,000 francs, and in the event of the airman being killed the money will be handed to his dependents.

The destruction of a Sikorsky aeroplane with a pilot and two Russian officers on board by rifle fire from Austrian troops on the ground, is said to have occurred on Tuesday at Cracow. It is not stated at what height the machine was flying at the time. A German aeroplane was similarly brought down on the following day in Belgium. In this case, however, the machine was at a height of about 1,500 ft., well within the danger zone even

from rifle fire, but whether the aircraft was brought down through the pilot becoming disabled or through structural damage to the machine is not known—the former is, however, the more probable, as on Tuesday of this week a French aeroplane was riddled with bullets yet escaped capture, and returned to Belfort.

A most exciting incident was recorded from near Verviers on the 3rd inst. A Belgian pilot is said to have sighted a German aeroplane and immediately gave chase. The two pilots engaged in a duel for some twenty minutes—each trying to destroy the other by revolver shots, and at length the Belgian endeavoured to ram his opponent, whereupon the latter planed to the ground. The Belgian followed, but the German officer was rescued by a squadron of cavalry, who abandoned the aeroplane. The latter was found to be fitted up for carrying explosives.

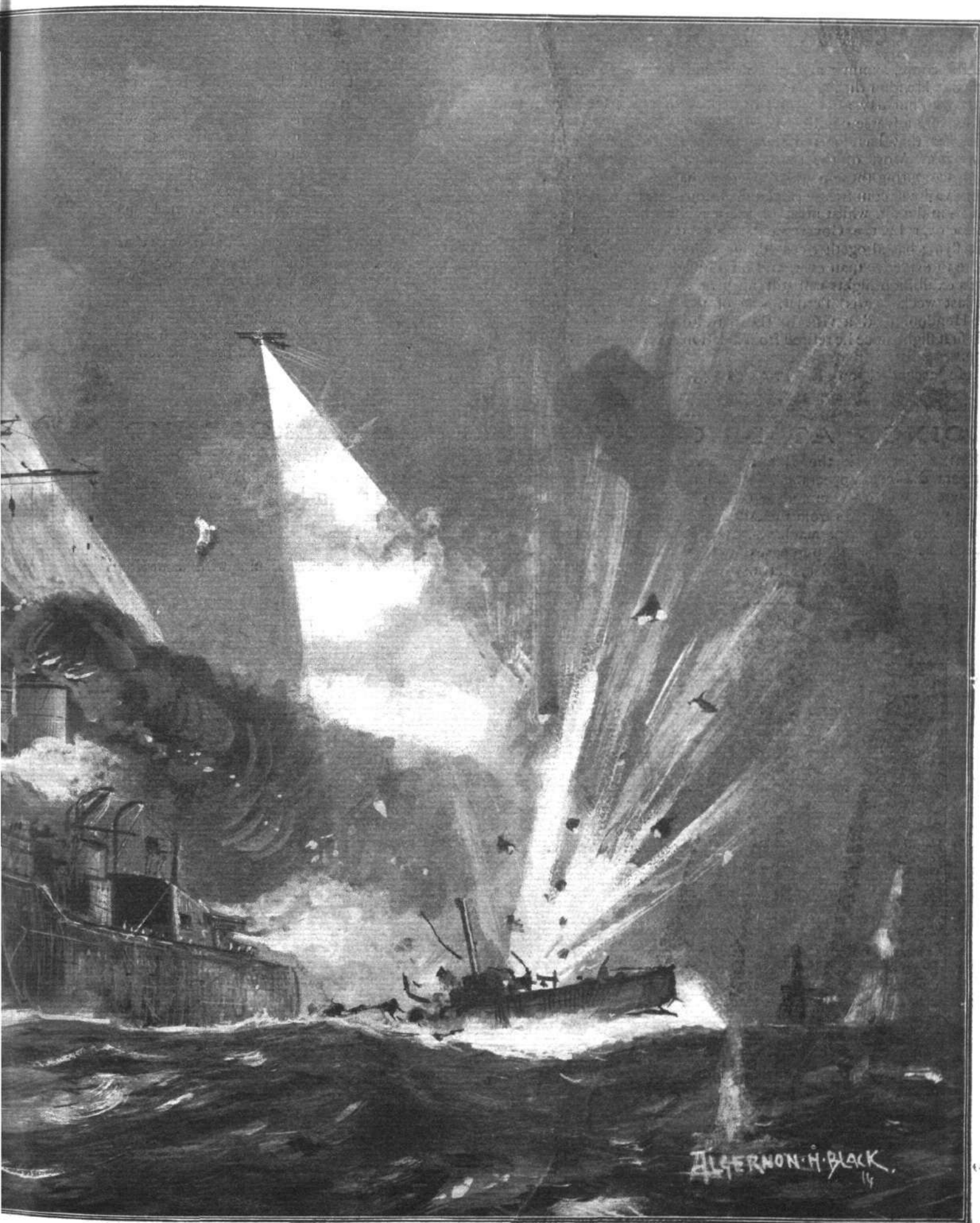
A report, which is, however, considered to be incorrect, comes from Liège, where the Civil Guard are stated to have fired on an aeroplane during the attack upon that city. The machine is said to have had six passengers—five of whom were killed—but it is not believed that the Germans have an aeroplane capable of carrying so many passengers. Aircraft, however, carried out a considerable amount of work at Liège, and several aeroplanes as well as a Zeppelin have been brought to the ground by gun or rifle fire. A Zeppelin is also stated to have silenced one of the surrounding forts by the discharge of bombs into it. The difficulty experienced in discriminating between friendly and hostile aircraft is well illustrated by the experiences of two Belgian airmen during the siege. They had ascended from the city for the purpose of reconnaissance, but owing to the high wind were unable to get out of reach of the effects of gunfire, not only from the German troops, who immediately attacked them, but also from their compatriots in the forts. The shells did not reach the machine, but burst below it, and the effect upon the atmosphere was such as to cause the aeroplane to roll and pitch violently—the whole being a most nerve-racking experience. Ultimately the airmen were compelled to land at Waremmé, owing to engine trouble, but escaped capture. An account is also to hand of a fight between a Belgian and a German aeroplane at Liège, the former attacking and destroying the latter, while he escaped injury. These are a few of the incidents of this nature which have been reported, but, as we have indicated, it is extremely difficult to get at facts.



THE EYES OF THE FLEET. WHAT WAR IN THE AIR AND SEA FIGHTING MAY BE
detected from above and destroyed by H.M.S. "Conqueror"

AUGUST 14, 1914.

FLIGHT



Q.—A squadron of seaplanes co-operating with the 2nd Battle Squadron in a night attack. A hostile submarine and Battle Squadron, at near quarters in the nick of time.

FLYING AT HENDON.

WIND or rain, summer and winter, there has always been flying at Hendon during the last two years. Every week end and Thursday afternoon has seen a meeting, even under very adverse conditions. It is only a vital matter like war that has for the moment suspended regular activities. Most of the pilots who have been much in evidence during these popular meetings have left to serve their various countries—England, France and Switzerland—in the air, whilst most of the machines have been taken over by the Government. This does not mean that flying has altogether ceased, for school work is now more in evidence than ever, and on Thursdays and week ends exhibition flights will still be given. On Thursday of last week, Lewis Turner, one of the pioneer pilots of Hendon, paid a visit to the aerodrome, and made his first flight since he retired from aviation several months ago.

He ascended on E. Prosser's 45 h.p. Caudron



DOINGS AT BRIGHTON-SHOREHAM AERODROME.

DURING last week the Brighton-Shoreham aerodrome presented a busy appearance. Additional hangars were being erected to accommodate certain pilots, and there were numerous visits from the Admiralty and War Office officials to inspect the machines. As a result, it is understood that several purchases were made, including 120 h.p. Austro-Daimler Martinsyde monoplane, Mr. J.

and made a splendid flight in the rain, showing that he had lost none of his old skill. Lewis Turner has returned to aviation on his country's call, for he has, amongst many others, offered his services to the Royal Flying Corps. The same afternoon A. E. Barrs, F. G. Dunn and R. J. Lillywhite of the Grahame-White stud, bade farewell for the time being to Hendon and departed for Farnborough to join the "Corps." Other Hendon pilots who have been called away are E. Baumann, Louis Noel, and Pierre Verrier.

Saturday last was dull and windy, so that very few ventured to visit Hendon. The only flight made was a fine one by E. Prosser on his 45 h.p. Caudron, who remained up for about 15 mins. Sunday's flying consisted of several test flights by an army pilot on the Grahame-White 80 h.p. Henry Farman, and the departure for Farnborough of a Maurice Farman, piloted by W. Birchenough.

Alcock's 100 h.p. Sunbeam M. Farman, Mr. J. L. Hall's 50 h.p. Avro, the *Daily Mail* 80 h.p. Avro waterplane, and a 90 h.p. Austro-Daimler belonging to the Cedric Lee Co.

All the pilots have offered their services to the Admiralty and War Office and are awaiting instructions.

On Monday last Mr. Raynham met with a mishap



A snap at Hendon during the afternoon tea hour.

when starting off for Portsmouth. After taxiing down the river, the engine started missing and the machine fell opposite the railway bank. Fortunately Mr. Raynham was not hurt. The several schools at Shoreham are extremely busy with tuition, and many applications have been received during the week.

Mr. William Mortimer, a pupil of Messrs. Pashley Bros., took his certificate on August 9th, on a Henry Farman biplane, 50 h.p. Gnome engine. Mr. Mortimer obtained his certificate in three working weeks. It was

his intention to join a newly-formed flying school at the Brighton-Shoreham aerodrome, but since the outbreak of the war he has volunteered for the Royal Naval Air Service.

Mr. J. Alcock made an excellent sea flight on Monday evening, averaging a speed of 75 miles an hour with a passenger, getting up to nearly 4,000 ft., and making a fine spiral descent.

Several pupils expect to obtain their certificates within the next week.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Eastchurch Flying Grounds

Naval Flying.—A good deal of work has been done during last week. Numbers of machines have been coming and going generally and making for various stations to meet the present conditions of war, but for obvious reasons no details can be published. Mr. F. McClean, with his 160 h.p. Short seaplane, has joined the Navy at the Isle of Grain, receiving the rank of Flight Lieutenant. There has been no civilian flying.

Brooklands Aerodrome.

TUESDAY morning last week Mr. Stutt was out on a Bristol biplane; in the afternoon, both solo and with pupils. Capt. Dawes on B.E. 229 in from York en route to Farnborough. Mr. Hawker to Farnborough to deliver Sopwith "Scout."

Mr. Stutt busy with pupils Wednesday morning on Bristol biplanes; in the afternoon, Mr. Hawker to Farnborough to deliver his Sopwith "looper," Lieut. Briggs, R.N., on Blériot (90 h.p. Le Rhone) to Eastchurch.

On Thursday morning, Mr. Stutt busy with pupils on Bristol biplane. Mr. Gower to Farnborough to deliver 50 h.p. Blériot. Flight-Lieut. Marix, R.N., testing Albatros biplane, on which he afterwards flew with a

afternoon, Mr. Gower testing Blériot "parasol" (80 h.p. Gnome). Capt. Fox returned to Farnborough with Lieut. Joubert de la Ferte on M.F. 356. Mr. Gower to Farnborough to deliver Blériot "parasol." Bristol and Blériot school work.



Lieut. T. R. Wells, 33rd Punjab, who secured his *brevet* on July 21st at the Vickers Flying School, Brooklands. In the height test Lieut. Wells climbed to 3,700 ft.



Mr. A. G. Shepherd, who took his *brevet* at the Grahame-White School, Hendon, at the end of last month.

passenger to Eastchurch. Lieut. Norman Spratt to Farnborough on Mr. Creagh's 80 h.p. Bristol tractor biplane. Capt. Fox (with Lieut. Joubert de la Ferte as passenger) in from Farnborough on M.F. 356. In the

On Friday, Bristol and Blériot pupils out.

Blériot School.—Circuits and eights last week. Mr. McKinley 35 mins. on Penguin; on 45 h.p. Anzani Mr. Treloar 42 mins., Mr. Pitt 20 mins., Mr. Miller 10 mins.

Bristol School.—Tuesday, last week, passenger tuition to Lieut. Moule (3 flights) and Lieut. Bagley (2).

Wednesday, passenger tuition to Lieut. Moule (4), Lieut. Bagley (3), Mr. Arbuthnot (4), Mr. Thompson (4). Rain stopped further work.

Thursday, as passengers, Mr. Arbuthnot (2), Lieut. Moule (1), Mr. Thompson (2), Lieut. Bagley (2). Solos by Lieut. Moule (4), Mr. Collins (4).

Friday, passenger tuition to Mr. Arbuthnot (5), Mr. Douglas (3), Lieut. Bagley (4), Mr. Gamwell (4), Mr. Weir (3), Lieut. Nickerson (4), Mr. Thompson (5). Solos by Mr. Douglas (3), Mr. Weir (3) and Lieut. Bagley (1).

Saturday, as passengers: Lieut. Nickerson, Mr. Gamwell, Mr. Thompson and Mr. Arbuthnot. Solos by Lieut. Moule (2), Mr. Douglas (1), Mr. Weir (2), Lieut. Bagley (20) and Mr. Thompson (1).

Mr. Weir was successful in taking his certificate on Monday, August 10th, after only four days at the school. Joining on Friday last, he made his first solo flight on the same day and rapidly became proficient in piloting the school biplanes on which he took his certificate on Monday evening.

London Aerodrome, Collindale Avenue, Hendon.
Grahame-White School.—Tuesday last week,

Messrs. Courtney, Wyles, and List straights with Instructor Dunn.

Friday, Messrs. Strickland, Lister, Upton, Wyles, Duncan, Easter, Toolis, Stalker, straights with Instructors Lowe and Russell. Mr. Carabajal rolling with Mr. North. Mr. Palmer straights and circuits with Mr. North.

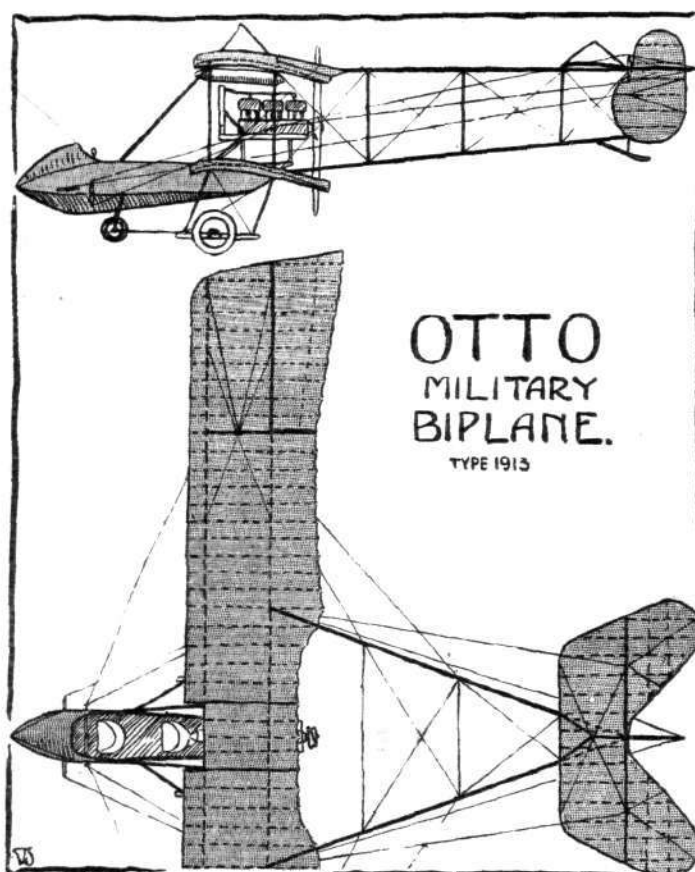
Saturday, Messrs. Wyles, Strickland and Easter straights with Instructor Russell.

AEROPLANE TYPES.

THE OTTO MILITARY BIPLANE.

THE Otto military biplane (type 1913), although somewhat on the lines of the Henry Farman military machines, actually differs from this type in many respects. First and foremost, it is constructed practically throughout of steel. Some considerable difference will also be found in the disposition of the engine and *nacelle*, the former being higher and the latter lower than obtains in Farman practice. Each of the main planes is built up on two spars, the front one of which is close to the leading edge, whilst the rear spar is placed some distance from the trailing edge. Both planes are given a slight dihedral angle and are attached to small, fixed, central pannels or sections. The upper plane has a greater span than the lower one, and large *ailerons* are fitted to the upper plane extensions only. Six pairs of steel struts separate the top and lower planes, and two pairs of triangular outriggers extend rearwards from the rear spars and carry the tail. The latter consists of a fixed stabilising plane, 3.2 sq. m. area, mounted on the top outriggers, and having two elevator flaps hinged to the trailing edge. Between the elevators is a vertical rudder hinged to the last strut joining the top and bottom outriggers. The *nacelle*, which is well streamlined, extends forward of, and below the lower plane, the pilot being seated in front with the passenger behind him; the front portion of the *nacelle* slopes upwards, forming a protection from the wind for the pilot. At the rear of the *nacelle* is a strong superstructure, carrying the engine high up, midway between the main planes. In front of the engine is the radiator, and above is the fuel tank. A portion of the trailing edges of the top and bottom planes is cut away to provide clearance for the propeller, which is 2.7 m. in diameter. The engine is a 6-cyl. 100 h.p. Argus, a type that has given very satisfactory results in Germany. The landing chassis is both strong and simple, consisting of two pairs of steel struts inclined outwards and forwards from the *nacelle* attached to two short skids, secured to which, by means of rubber shock-absorbers in the usual way, is a tubular steel axle carrying a pair of wheels. The control is of the usual Farman type, con-

sisting of a central universally jointed lever actuating the *ailerons* by a side to side movement and the elevator by a to-and-fro movement; a horizontal foot-bar operates the



rudder. The principal dimensions of this machine are:—Span, 14.8 m. (top), 9.5 m. (bottom); chord, 1.8 m.; supporting area, 40 sq. m.; overall length, 10.5 m.; speed, 110 k.p.h.

"VEE JAY."

ROYAL FLYING CORPS.

THE following promotion was announced by the Admiralty on the 7th inst.:

Capt. C. E. Risk, R.M.L.I., has been granted the temporary rank of Major whilst holding the appointment of Squadron Commander in command of a naval air station, July 1st.

The following were announced in the *London Gazette* of the 7th inst.:

Royal Naval Air Service.—Probationary Flight Sub-Lieut. Archibald Corbett-Wilson to be Flight-Lieutenant, July 15th, 1914.

R.F.C.—Military Wing.—Flying Officers to be Flight Commanders: July 29th, 1914, Lieut. Francis J. L. Cogan, R.A., and to be granted the temporary rank

of Captain. Capt. Robin Grey, Warwickshire R.H.A., Territorial Force.

The following appointments were announced by the Admiralty on the 8th inst.:

H. de Havilland, C. Lan Davis, and G. Bentley Dacre have been appointed Probationary Flight Sub-Lieutenants, and appointed to the "Pembroke," additional, for Eastchurch Naval Flying School, August 5th.

The following were announced in the *London Gazette* of the 11th inst.:

R.F.C.—Military Wing.—Supplementary to regular corps. Gentlemen to be Second Lieutenants (on probation); August 12th, 1914: Mark Dawson, John G. Miller, James Valentine, Leonard Parker, Thomas F. Rutledge, Robert Loraine, and John R. Howett.

THE PONNIER SCOUTING BIPLANE.

UP to the time of the winning, by Pixton on the small Sopwith biplane, of the Schneider Cup, French designers confined their attention, when high speeds were desired, to the monoplane type of machine. Their efforts in this direction were crowned with a considerable amount of success, as evidenced by the performances of the Deperdussin and Ponnier monoplanes, piloted by Prevost and Vedrines respectively, in last year's Gordon-Bennett race

The *fuselage* is identical with that of the cavalry type monoplane exhibited at the last Paris Aero Show, when it was fully described in our columns. It is of rectangular section and built up of four ash *longerons* connected by struts and cross members, the whole being made rigid by means of the usual cross wiring. In front the *longerons* converge until they meet the rear engine-bearer. From here the tubular extensions of the *longerons* are swept



The Ponnier biplane, as seen from the front.

at Rheims. But whereas the maximum speed attained by these racing machines was very high, the speed variation was practically negligible, and it was not until the excellent performances of the Sopwith biplane brought home very forcibly to French designers the possibilities of a small, fast biplane, that this type was taken up in France. Since then, however, several French constructors have, at the request of the Government, we believe, produced scouting biplanes of the type originated in this country by the Sopwith Aviation Co., Ltd.

In the case of the Ponnier biplane, of which we publish illustrations this week, the step from monoplane to biplane was not a very long one, since the particular type of *fuselage* employed in the former was eminently suitable for the latter. Practically the only alteration necessary was that of substituting two pairs of wings for one pair, and arranging them in such a manner that the balance of the machine was preserved, and the scouting biplane was evolved.

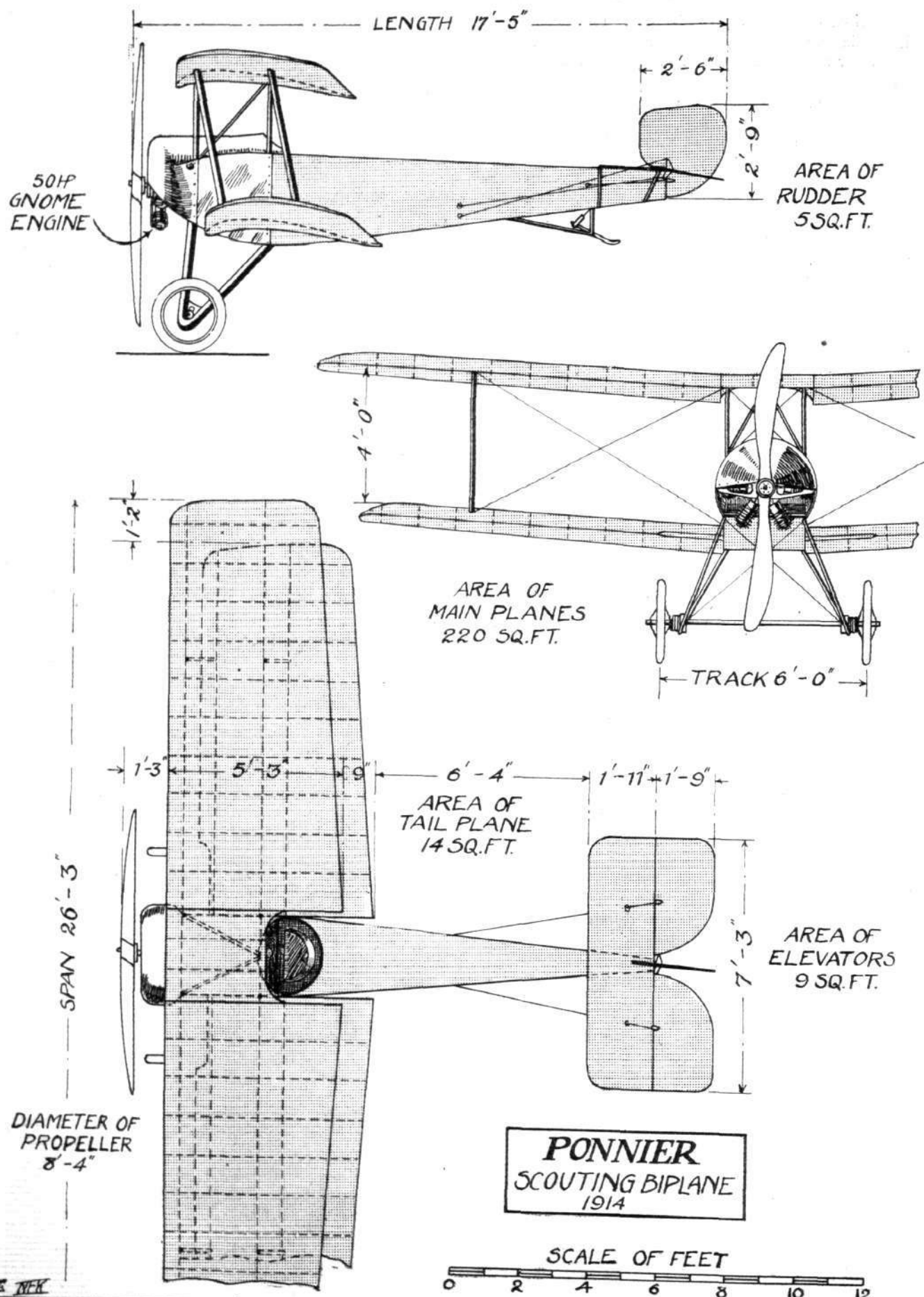
outwards to clear the engine and carry on their front extremities the front engine-bearer, which is of the usual pressed steel type.

As in the monoplane, the *fuselage* is entirely covered in, the rear portion being covered with fabric, whilst the nose of the machine up to the pilot's seat is enclosed by aluminium sheeting, the front portion of which forms a cowl over the front and upper half of the engine. At present a 50 h.p. Gnome is fitted, but by slightly enlarging the cowl an 80 or 100 h.p. Gnome could easily be accommodated.

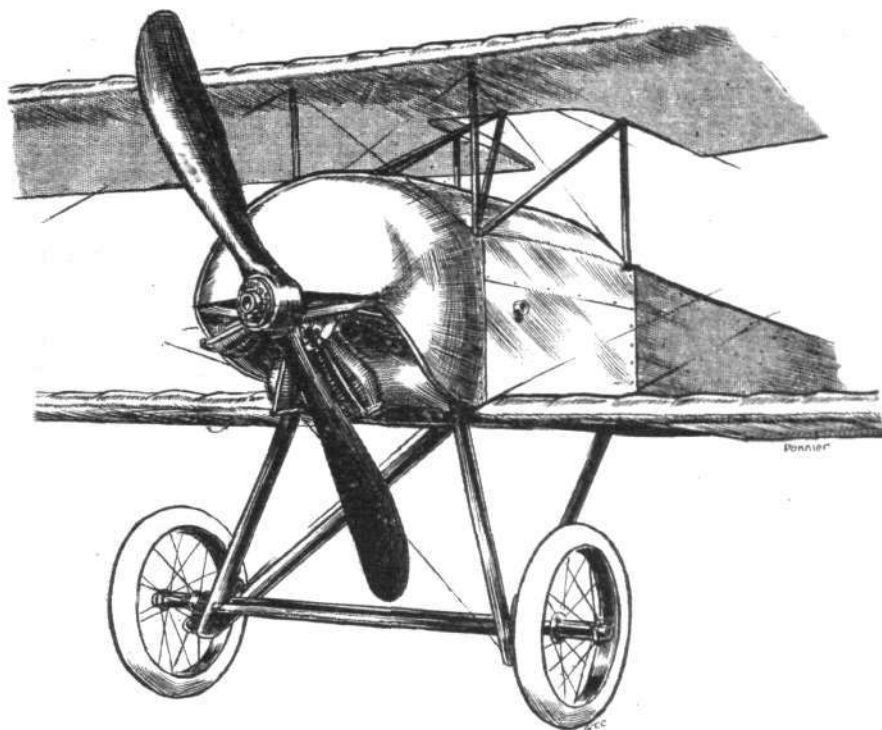
In plan view the main planes are similar to those of the Ponnier monoplane, tapering considerably towards the tips. In section they are characterised by a Philips entry, and a very pronounced return of the trailing edge. The wings are unusually thick, and thus allow of fitting spars of great depth, which again makes for strength of construction, and enables the number of interplane struts to be reduced to two on each side. These struts are



A three-quarter view from behind of the Ponnier biplane.



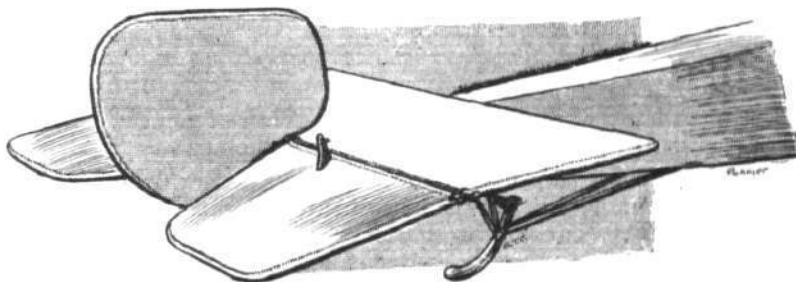
THE PONNIER SCOUTING BIPLANE.—Plan, side and front elevations to scale.



Chassis and engine housing of Ponnier biplane.

steel tubes of excellent streamline section, and cross bracing is effected by means of stout stranded cables, terminating in quick release devices, which greatly facilitate erecting and dismantling of the wings. The angle of incidence diminishes considerably towards the tips, a fact to which the constructors attribute, in great part, the stability of the machine.

The type of chassis employed in the Ponnier monoplane has been retained, and consists of two pairs of struts, each pair of which forms a V as seen from the side. The apices of the two V's are connected by a tubular axle, working in slots in a plate which is welded into the angle between the front and rear tubular struts. Lateral stiffness of the chassis is provided by cables running from the upper end of one chassis strut to the lower end of the strut opposite, as will



Tail planes of the Ponnier biplane.

The Trans-Atlantic Flight.

THE reasons which led to the postponement to October of the attempt to cross the Atlantic in the Curtiss flying boat "America" have now been published in the form of correspondence between Mr. Curtiss and Mr. Rodman Wanamaker's representative, Mr. Will Gash.

Since then the outbreak of the war has probably closed down further effort for this year, and in this connection Lieut. Porte arrived in this country per the "Lusitania" on Wednesday last.

The letter from Mr. Curtiss was in the following terms:—

My dear Mr. Gash,—In view of the enforced delays, I think it best to advise you as the representative of Mr. Rodman Wanamaker that, in my opinion, we should discontinue our efforts to rush the "America" to completion for shipment on August 1st. By making a hasty job of it, this might be possible, but I do not think it will be fair to Lieut. Porte or to the machine. During the last three weeks of experimental work, the hull has been subjected to much rough handling and has suffered to such an extent, I think the bottom should be entirely rebuilt. If we have time to do this properly we can incorporate improvements suggested

be seen from the front view of the machine. Springing is by means of rubber shock-absorbers wound round the axle and anchored to a short length of steel tubing welded on to and projecting out from the apex of the chassis struts.

From the pilot's seat an exceptionally good view for a machine of this type is obtained. It is stated by the constructors that the downward angle of vision is 20° , or, in other words, that when the machine is flying at a height of 1,000 ft., the pilot is able to see the ground as far back as a point 400 ft. in advance of a point vertically below him. By cutting away the trailing edge of the centre portion of the upper plane, a good view is obtained in an upward direction, so that it is only in a forward and upward direction that the view is obscured.

Control is by means of a foot-bar for the rudder, and a rotatable hand wheel for warp and elevator. The fixed tail plane, which is of the flat non-lifting type mounted on top of the fuselage, is constructed of a framework of steel tubes, as are also the elevator and rudder. A tail skid of the type shown in one

of the accompanying sketches, protects the tail planes against contact with the ground. The weight of the machine empty is 570 lbs., and the maximum and minimum speeds are 65 and 33 miles per hour respectively. With a 50 h.p. engine the machine climbs to an altitude of 1,000 metres (3,281 ft.) in 8 mins., with a load of 350 lbs.

by the numerous hydroplane experiments, and greatly improve the craft in several important details. It seems to be foolhardy to jeopardise the success of the trans-Atlantic attempt by starting out with any less than the most nearly perfect machine we can turn out, and, in view of the fact that Lieut. Porte does not wish to start from Newfoundland between August 10th and October 1st, I advise postponing the start until the latter date.

G. H. CURTISS.

To this Mr. Gash replied:—

Dear Mr. Curtiss,—Replying to your letter of to-day, Lieut. Porte agrees with you that on account of the reasons mentioned in your letter the trans-Atlantic flight should be postponed until October. As you will remember, Mr. Wanamaker has always urged us not to start the flight until all preparations have been completed and every possible precaution has been taken against accident and danger. Acting for Mr. Wanamaker in his absence, I therefore agree with Lieut. Porte and yourself to postpone the flight until October.

WILL GASH.

It is stated that to start between August 15th and the latter part of September would be against all warnings of the United States Weather Bureau on account of storms that are expected at that time.

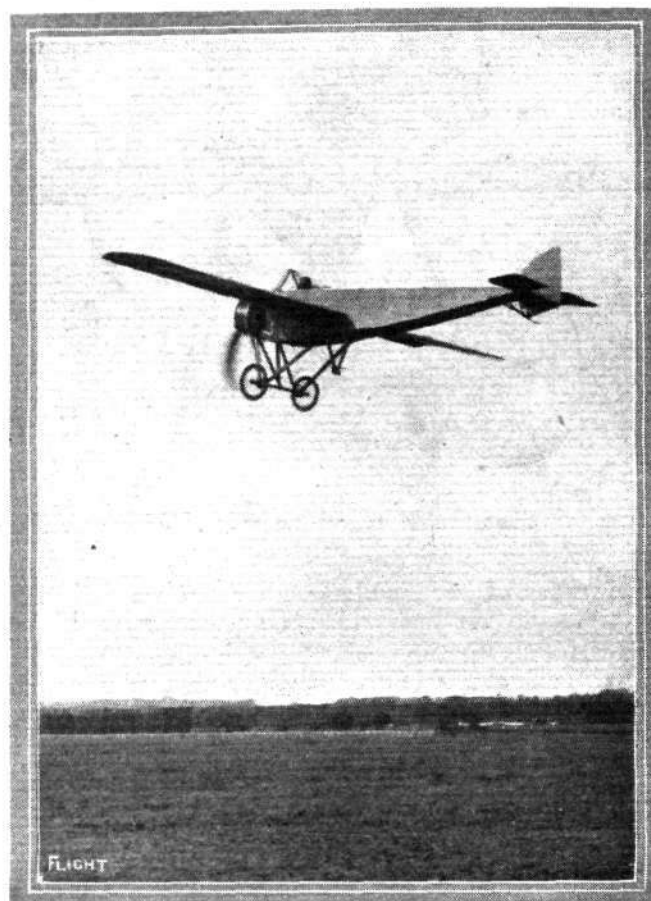
EDDIES.

OPEN Sesame! Most of my readers remember those magic words of the famous "Forty." Such is the power of the pilot's certificate of to-day. It appears that if you possess one of these "tickets" granted by the Royal Aero Club you can get out of almost any trouble by showing it to the powers that be—at least, this seems to be the case, judging from an incident of the war I heard the other day. It is too long a story to give in full in the space I have at my disposal, but, briefly, this is how it goes:—On Saturday, August 1st, W. Warren—of helmet fame—and G. W. Smiles, both of Hendon, left for Paris to fetch some Gnome engines. They arrived at Paris safely, just in time to realise that the country was in a state of war. The engines had been taken over by the French Government, so it only remained to return to England. This was easier said than done, for all ordinary service was stopped, and the crowds waiting outside the stations to obtain tickets allowing them to leave Paris were immense. The greater part of Sunday and Monday was spent by Warren and Smiles in striving to obtain their passports and special railway tickets, but without success. On Tuesday they went extra early to take their place in the queue, but the crowd was greater than ever, many having been up all night. Seeing it was hopeless they decided to try and obtain a car and get to the coast in that way.

x x x

It was then that the magic happened. Warren thought of his aerial "ticket." It had passed him across a French aerodrome once, why not try it now? He noticed an important looking military personage and explained that they were English aviators and desired to be in England that day. On producing their pilot's certificates they were at once taken to the officer in charge, who wrote out a special pass, and at 3 p.m. they were in a train for Dieppe. Their fellow passengers were made up of French soldiers on their way to various stations. On several occasions they were questioned and almost stopped from proceeding—but each time the "ticket" was shown they were passed with a friendly hand-shake. Dieppe was reached eventually, and after a long wait they got on board—again with the assistance of their "tickets"—a steamer sent over by the Admiralty. Even in England, which

they reached safely on Wednesday, the certificates got them past all difficulties, such as having only return tickets *via* Calais-Dover instead of Dieppe-Newhaven. As one of our friends said—and he was all "smiles"—



"Flight" Copyright.

A turn round Hendon Aerodrome on the Morane-Saulnier.

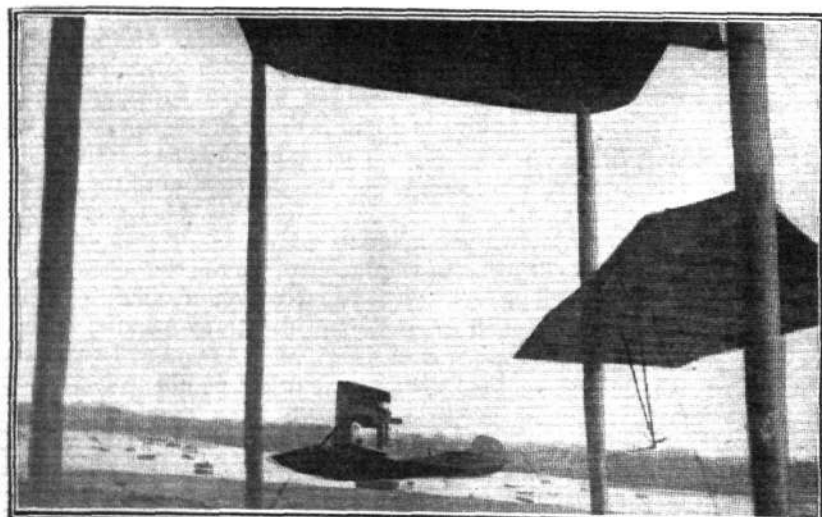
"Well, it cost me £75 to get my certificate, and I reckon I have got full value out of it."

x x x

Although he is on his way to the front, Louis Noel has not forgotten FLIGHT, for we have received a card from him in which he says: "I am in the 3 Cie. of the Flying Corps at St. Cyr. . . . Met Garros, Verrier, and Chevillard. Hope to receive orders in a few days to fly to frontier." Incidentally this finally settles the early rumours of Garros having rammed a Zeppelin and heroically lost his life in the adventure. During Warren's adventurous visit to Paris, to which I have just referred, he met E. Baumann, who was on his way to Switzerland, and spent a few hours in talking over old times. Well, let's hope we shall soon have *all* our old friends back again.

x x x

Quite a lot of amusement was caused by Mr. Manton on the occasion of his visit to Taunton recently, when he distributed from his machine a number of handbills written in the "Zummerzet" dialect. As no doubt



WATERPLANE RACING AT LAKE MICHIGAN.—A snap of a Curtiss flying boat, with two passengers on board, by the passenger in another Curtiss flying boat when racing neck and neck along Lake Michigan. Beyond is seen Lincoln Park (Chicago) Yacht Harbour.

many will be interested in this little essay I am finding a corner for it on this page:—

A WORD WITH 'EE PLAIZE!

This yere bill wuz dropped vrom my airypplane oves a thousand veet up in 'een. I wants to tell 'ee that I be going to Loop the Loop and turn me airypplane upside-down to-night at 6.30, and to-morrow (Vriday), and again on Zaturday as well, and on Zaturday afternoon, at 3 o'clock.

My airydrome in Taunton is up where Mister Salmest vlied at Quaker's Ground on the Bridgwater Road, and you can get inzide vur 6d., altho' o' course, if you pays a bob you zees more, which is only natral; and vur half-a-crown, why, you can get right up to the airypplane, and (if I bain't looking at 'ee) touch 'un.

I can tell 'ee 'tis all very wundervul and will make 'ee veel very ztartled tho' I zes it mezelf, not that I wants to be boastful, but I knows how I veel when I be a-doing of it. Now, don't 'ee be one of they unsporing people and stop outzide and zee it vur nothing. Remember! I've got my living to make same's you!

Yours airily,

MARCUS MANTON.

x x x

Mr. H. V. Roe, whom I succeeded in "holding up" for a few seconds in Trafalgar Square recently when he was on his way to the Admiralty, informed me that the Avro "Circuit" seaplane had made some splendid flights at Calshot during last week. Piloted by Mr. Raynham she rose off the sea easily after a short run and proved to possess very good climbing capabilities and speed variations. No official figures are at present available, but it seems certain that the machine does everything she was designed to do. The stability was excellent and Raynham was very pleased with his new mount. The Avro firm have thus again proved that they are in the front rank of our seaplane constructors, and the new machine should prove a valuable addition to our fleet of seaplanes if acquired by the Admiralty.

x x x

Mr. Lewis Turner, whose excellent flying first on Grahame-White machines and later on the well-known Caudron biplanes at Hendon will still be remembered, gave us a look in on Friday of last week to have a chat. Although Mr. Turner retired from actual flying some months since, he has not by any means given up his interest in aviation, and under the conditions which are prevailing at present he has not been able to resist the call of the air. When he dropped in upon us he was on his way to Farnborough to pass the acceptance tests for the Royal Flying Corps. An aviator with such long

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ROYAL AERO CLUB OF THE UNITED KINGDOM. OFFICIAL NOTICES TO MEMBERS.

Aviators' Certificates.

THE following Aviators' Certificates have been granted:—

- 861 Flight-Sergt. Hugh McGrane, R.F.C. (Maurice Farman Biplane, Central Flying School, Upavon). July 30th, 1914.
- 862 Sergt.-Maj. Frederick Henry Unwin (Maurice Farman Biplane, Royal Flying Corps, Netheravon). August 3rd, 1914.
- 863 Sergt. Alfred Robert May (Maurice Farman Biplane, Royal Flying Corps, Netheravon). August 4th, 1914.
- 864 Sergt. Frank James, R.F.C. (Maurice Farman Biplane, Central Flying School, Upavon). July 28th, 1914.

- 865 Graham Weir (Bristol Biplane, Bristol School, Brooklands). August 10th, 1914.

French Certificates.

- Fr. 1711 Capt. John Robert Campbell Heathcote (Q.O. Cameron Highlanders, Maurice Farman Biplane, Etampes). June 10th, 1914.
- Charles M. Smith (Maurice Farman Biplane, Etampes). June 13th, 1914.

HAROLD E. PERRIN, Secretary.

166, Piccadilly, W.

U.S. Army and Aviation.

A BILL has been passed by the U.S. Parliament for the organisation of a special aviation service in the Signal Corps of the U.S. Army providing for a service of 60 officers and 260 enlisted men, and creating special ranks of "military aviator" and "aviator student." Pay of officers and men will be increased 25 to 75 per cent.

experience of various machines as he has had—Mr. Turner obtained his *brevet* (No. 66) in the early part of 1911, and has flown constantly until a few months ago, including a trip to Russia, where he was for some time chief instructor to one of the Russian flying schools—should prove uncommonly useful to the R.F.C.

x x x

Among a batch of machines delivered by Mr. E. L. Gower of the Blériot school at Farnborough last week, was one of the 80 h.p. "Parasol" type, the first of these machines to be flown in England. Mr. Gower says that she behaved in a most excellent manner, being very steady and delightfully easy to fly. In the reception trials she climbed the necessary 3,500 feet in 8 minutes without being forced at all. "I have never flown a machine which I liked so much" is Mr. Gower's comment on her airworthy qualities.

x x x

A splendid *coup* in the interests of British Service aviation was effected last week by Mr. Farnall Thurstan of the Bristol Co., who by the aid of brilliant diplomacy and perseverance succeeded in getting across to this country a nice little batch of Gnome and other engines which were lying *perdu* at the place of their origin.

x x x

"Hustle" is the order of the day at the Supermarine works at Southampton just now, and the latest product is a small scouting biplane. In his breezy way Mr. Pemberton Billing has given the time table of the progress of the first P.B.9, as these machines are to be known. The decision to turn out the scout was not come to until Monday, when the draughtsmen attacked the problem of forthwith getting out the designs. To such effect did they work, that by Tuesday actual construction was commenced, and by the following Tuesday the machine was ready to take the air! More of this, we hope, next week.

x x x

By way of an example of how the present crisis is bringing back into the fold many who in the past have helped in aviation, it may be noted that one of the passengers now crossing the Atlantic to this country with the idea of joining the Royal Flying Corps is Mr. Robert Macfie of Brooklands fame.

"ÆOLUS."

⊗ ⊗ ⊗ ⊗

A Flying Corps for Guatemala.

On July 7th, the President of Guatemala opened the flying school which has been started by the Government. C. Marvin Wood, formerly of the Moisant School of New York, has been appointed chief instructor, while Capt. Dante Naunith will be in charge of the flying corps which is to be formed.

Models

Edited by V. E. JOHNSON, M.A.

The Hydro. Competitions at the Welsh Harp.

Two competitions were down to be held at the Welsh Harp on August 8th, viz., first, the Royal Aero Club Competition for a first prize of five guineas presented by the Royal Aero Club, a second prize of two guineas presented by Major Sir Bryan Leighton, Bart., and a third prize of one pound presented by Mr. R. Balston; and secondly, the Lady Shelley Competition for power-driven hydro-aeroplanes, the first prize being a very handsome silver cup (to be won outright) presented by Lady Shelley. The second and third prizes were silver and bronze K. and M.A.A. medals.

As all entries closed last post, Saturday, August 1st, they can scarcely have been affected in any way by present circumstances, and they cannot be called anything else than extremely disappointing. Only one competitor actually put in an appearance in the power-driven contest, viz., Mr. L. H. Slatter, whose work with model hydros. is well known to every reader of FLIGHT. In the other competition, which was not restricted in any way to any size or type of model save that the weight must not be less than one pound, the actual number of competitors was, we believe, considerably less than last year.

The weather conditions were about as bad as they could be, without actually rendering the competition impossible.

One of the regulations (a new one) in the Royal Aero Club competition, was that in one out of the three trials the competitors must launch the models with the wind. There was not the least trouble in launching the models against the wind, they being simply blown off the water in most cases, but in the run down wind not a single model succeeded in rising from the surface (save in one case, to be referred to later), and this in spite of the fact that two attempts were made.

The result of the two with-the-wind flights was Mr. L. H. Slatter 114 points, Mr. W. A. Bedford 104, and Mr. S. E. Hersom 98.

Some very good flights were made by almost all the competitors, Mr. Slatter accomplishing a duration of 49 secs. (a very stable flight), Mr. Hersom 50 secs., a long flight right back either on to or over some houses. Mr. O. Laing obtained a duration of 42 secs, Mr. Bond 30 secs., Mr. Bedford 30 secs. and Mr. Paveley 22 secs. The machines, without exception, were of the A frame twin-propeller rubber type, and their float systems, with one or two exceptions, were similar, being two floats in front and one behind. The exceptions had one float in front and two behind. So long as actual duration in the air continues to be made one of the chief, if not the chief, factors in deciding who wins, we have no doubt this type of model will always continue to be used.

Under these circumstances, the chief, in fact the only real, point of interest that the competition possessed from the writer's point of view, was when the models attempted to rise from the water, down wind.

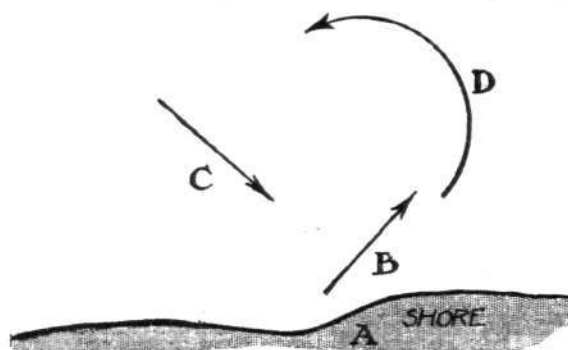
The task was one of considerable difficulty, as the following

circumstances will show. In the diagram, let A represent the starting point on the shore from which the models were released; the arrow, B, the direction in which the wind was blowing; and the arrow, C, the direction in which the waves (and they were quite waves) and breakers were rolling in.

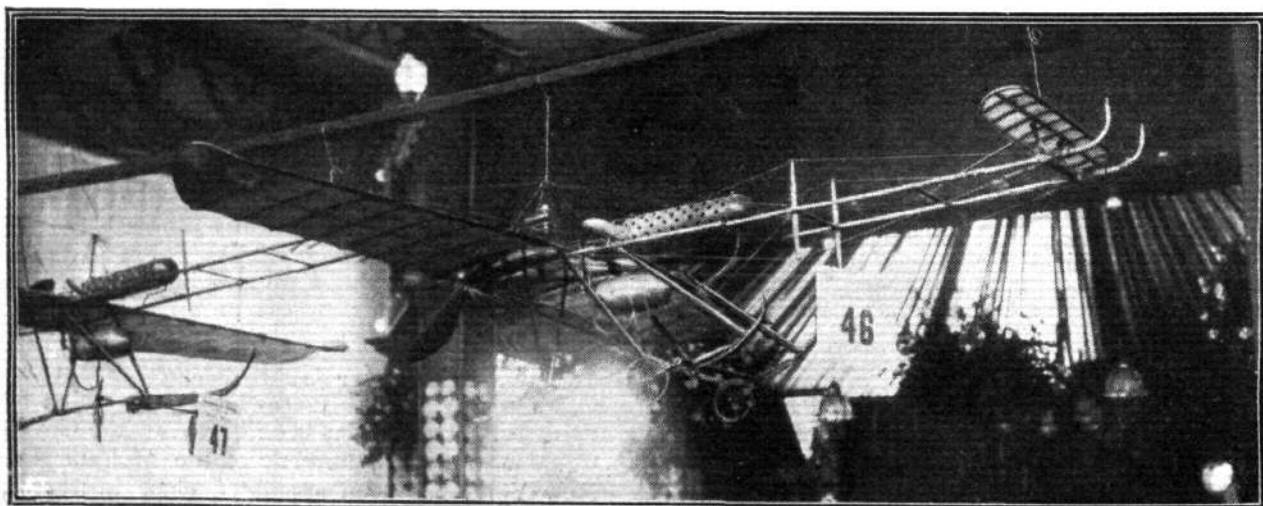
As the reader can easily see, they could and did catch the float on the near side first, thereby causing it to dig into the water and swing the machine round in the direction of the curved arrow, D. In other cases the model was carried by the surface current into the shore, and in one or two cases a straight or approximately straight run was made.

Several models appeared to nearly get off, but none accomplished it; there were a fair number of upsets, but not nearly so many as one might have expected.

In one case a model did actually rise from the water, but the flight was disallowed owing to the boat which was picking up the



models giving the model some shelter during the run. For instance, imagine the arrow, B, to be the initial run of the model, and an arrow through the centre of C parallel to B the position of the boat. The boat was then removed right away and another set of trials carried through, and no model succeeded in rising from the surface of the water. But for the waves travelling across the direction of motion, in all probability some, at any rate, of the models would have risen. However disappointing to the competitors, it was an excellent test of the extreme difficulty which any hydro-aeroplane, model or otherwise, has in rising under really adverse conditions, unless provided with an abnormal amount of power, and even in this case, when the machine was a full-sized one, a great deal would still depend on the skill of the pilot. The shocks which the floats encounter when bumping from wave to wave have a very powerful retarding effect, and if the machine be running not across but parallel with the waves, which in this case are breaking across the floats, the conditions are in some respects worse and the difficulties greater.



Mr. H. H. Groves' steam-driven monoplane (flash boiler type) at Olympia.—The machine half shown on the left is another model by the same builder.

Since, as already stated, only one competitor put in an appearance in the Lady Shelley Competition, it was decided to consider this competition postponed until later on in the season, when another competition, which is already fixed, will be held. In spite of this, Mr. Slatter, who had not as yet actually tried his machine in free flight, decided to attempt one. With regard to the machine itself, some illustrations and a description will be given at an early date; at present, we need only say that it is a tractor monoplane fitted with two main floats (catamaran type) and a tail float.

The steam plant, of the flash boiler type, has given very good results as to actual static thrust and running abilities.

The fuselage or body is enclosed. The difficulties of fitting such a plant successfully in a closed-in body must be attempted to be properly understood. Mr. Slatter has, however, succeeded in accomplishing this, and the result is one which reflects greatly to his credit. The steam plant was originally one of Mr. H. H. Groves', but some modifications have, we believe, been made in it.

The elements seemed determined that we should not have an opportunity of seeing what the machine was capable of, and the end finally came when Mr. Slatter, nearly up to his knees in the limpid (?) water of the Welsh Harp, was valiantly struggling to hold the machine down on the water preparatory to letting it go. The wings, braced slightly forward, were unfortunately insufficiently stayed from behind, and a wind gust bringing out one of them from its sockets, the wing flew forward, and attacking the propeller unkindly broke it in two, sustaining itself no damage whatever. Of a truth, aeronautical experiments demand from their votaries much enthusiasm, great perseverance and patience, and an evenness of temper far above the average. We understand, however, that the earliest possible opportunity will be taken of again trying the machine.

Propellers on Gliders.

"With reference to your query in a recent issue," writes Mr. Thomas Key, "I would like to state that during my experiments with paper gliders, I have often out of idle curiosity tried the effect

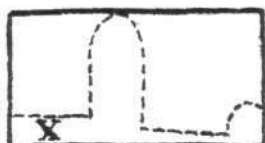


FIG. 1

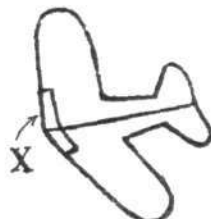


FIG. 2



FIG. 3



FIG. 4

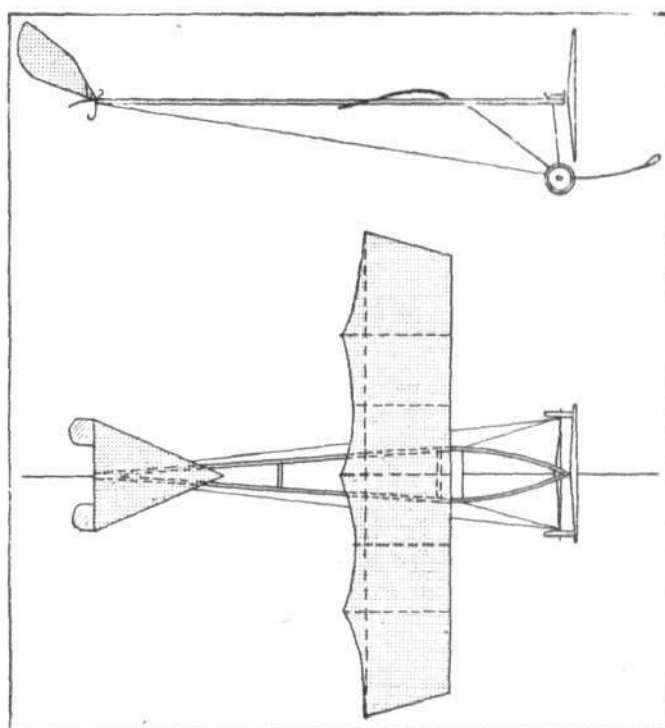
of a dummy propeller, but I cannot say that I quite agree with your correspondent Mr. J. Cowley's remark, that the model's gliding abilities are improved, for although they introduce a touch of realism, I am inclined to believe they impede rather than aid the model's progress."

"Re the article on 'Some Simple Paper Gliders,' I have always found," writes Mr. L. Marshall, "that the addition of a propeller

increases the efficiency of a paper glider a great deal, the distance flown being twice as great with the propeller as without, the speed being increased slightly, though this depends very greatly on the type of the model. I make my gliders in somewhat the same way that Mr. J. Cowley does, but with this difference, after folding a piece of notepaper in two, I cut along the dotted line shown in Fig. 1, leaving a long strip of paper in front; I then unfold the paper and roll up this strip, to the front of the model, Fig. 2. This roll acts as a stiffener, as well as weight, because the wings have a dihedral angle in all my models, and consequently the roll is bent with it. Thus their front view is like Fig. 3 instead of Fig. 4. The propeller (not shown in the figures) is made of the same materials as the rest of the model, and fastened on by means of a pin passing through a paper collar. I find that models of about 8 ins. span are the most successful, though, if properly launched, one of 2 ins. span will glide almost as well. The models can be steered by means of wing warping or ailerons. It is a very pretty sight to see a model, with its propeller caught, glide at the ordinary angle and speed, and then if the propeller releases itself suddenly, dart forward at a flatter angle."

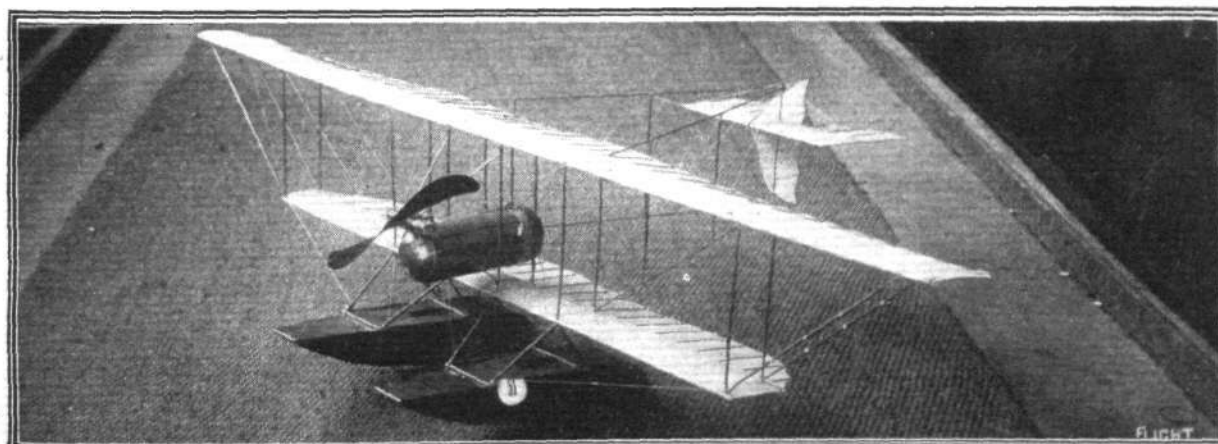
The Rice-Skinner Tractor Model.

This model, of which drawings are published this week, was constructed by Mr. J. Rice-Skinner, Hon. Sec. of the Twickenham Aero Club. It was the pioneer of its type in the above club, but



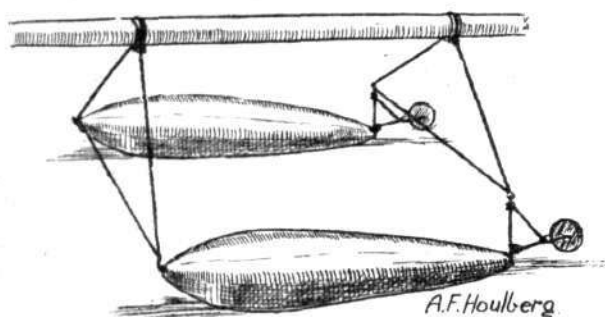
Mr. J. Rice-Skinner's tractor model.

owing to its appearance in flight and the popularity of the type, it can safely be said that every member of the club is in possession of



Messrs. D. Hiscox and C. Desoutter's compressed air driven hydro-aeroplane Olympia model, a very fine piece of workmanship and design.

a tractor at the present time. The model is 3 ft. long (excluding length of fin), and has a maximum span of 3 ft., the greatest depth [maximum chord] of the main plane being 7.75 ins. The chassis consists of 16 s.w.g. piano wire, and is of the A type with central skid. The wheels are 2 in. aluminium disc with rubber tyres [rubber tyres are useless, save for appearance, they only add to the weight]. The motive power is 8 strands of $\frac{1}{4}$ -in. strip rubber, coupled directly to the 10-in. propeller. The fuselage is $\frac{1}{4}$ -in. section spruce, and the wings are of split bamboo covered with Clarke's proofed silk. Total weight, 8 ozs.; average length of flight, 225 yds.



The floats and wheels of Mr. A. F. Houlberg's Olympia model.

KITE AND MODEL AEROPLANE ASSOCIATION.

Official Notices.

British Model Records.

Single screw, hand-launched	Duration	J. E. Louch	95 secs.
Twin screw, do. ...	Distance	R. Lucas	590 yards.
	Duration	G. Hayden	137 secs.
Single screw, rise off ground	Distance	W. E. Evans	290 yards.
	Duration	J. E. Louch	68 secs.
Twin screw, do. ...	Distance	L. H. Slatter	365 yards.
	Duration	J. E. Louch	2 mins. 40 secs.
Single-tractor screw, hand-launched	Distance	C. C. Dutton	266 yards.
	Duration	J. E. Louch	91 secs.
Do., off-ground	Distance	C. C. Dutton	190 yards.
	Duration	J. E. Louch	94 secs.
Single screw hydro., off-water	Duration	L. H. Slatter	35 secs.
Single-tractor, do., do.	Duration	C. C. Dutton	29 secs.
Twin screw, do., do.	Duration	S. C. Hersom	65 secs.
Engine driven off grass	Duration	D. Stanger	51 secs.

Competitions.—The Royal Aero Club's Hydro. Competition took place on August 8th on the Welsh Harp Water, Hendon, and considering the rain, &c., there was a good attendance. The following is the placing of the first six:—1st, L. H. Slatter, K. and M.A.A., winning the Royal Aero Club's £5 ss.; 2nd, H. Bedford, K. and M.A.A. and Leytonstone, winning £2 2s., presented by Sir Bryan Leighton; 3rd, S. C. Hersom, Leytonstone, winning £1, presented by Mr. R. M. Balston; 4th, H. Bond, K. and M.A.A. and Leytonstone; 5th, D. Laing, K. and M.A.A. and Wimbledon; 6th, D. A. Pavely, K. and M.A.A. and Croydon. The best duration was made by Mr. Hersom of 50 secs., Mr. Slatter coming next with 49, but as the result was on the average of the flights and stability was also taken into consideration, the result was as given. Messrs. W. H. Akehurst, W. E. Evans, and H. Lyche were the judges.

Postponement of Competitions.—The power-driven contest for the Lady Shelley Cup was postponed, as out of four entries only one turned up; this was on account of the weather, and some of the members being required for service with the forces. The date now fixed will be October 17th. Also that with regard to the present war crisis, and in view of the important arrangements being made in connection with aviation, it was found necessary to postpone the competition fixed for August 12th until later in the season.

Wakefield Cup.—The competition for this takes place to-morrow (Saturday) on Mitcham Common at 3.30.

Inter-Team Contest.—The draw for the Inter-Team Contest took place on August 8th, after the Hydro. Competition. The secretaries also decided that the next round should be held on September 5th. The Paddington and District and the Redhill and Reigate Clubs were drawn to fly against Aero-Models Association on the Aero-Models ground. Croydon and District Club to meet Leytonstone on the Leytonstone ground. Each competing club must have at least one official observer present, and should advise the gen. hon. sec. of the team and reserves that the clubs have selected at least seven days before the date.

27, Victory Road, Wimbledon.

W. H. AKEHURST, Gen. Hon. Sec.

AFFILIATED MODEL CLUBS DIARY.

Club reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Leytonstone and District Aero Club (23, WOODHOUSE ROAD).
AUGUST 15th, flying as usual on Wanstead Flats, 6.30 and 10.30; if wet will meet at club room. General meeting on August 19th at 7.30 at 108, Whyteville Road, Forest Gate.

UNAFFILIATED CLUBS.

Burton and District Aero Club. (156, SHOBNALL ROAD.)

OWING to the war, the Burton Water Carnival and Hydroplane (Model) Competition will be postponed until further notice.

Finsbury Park and District (66, ELFORT ROAD, Highbury, N.).

AUGUST 15th, h.l. duration for tractor monoplanes, 5 p.m. Exhibition flying, Finsbury Park, from 3.30.

CORRESPONDENCE.

Two Sunsets in One Day.

[1882] I see that "Eolus" states in his first paragraph in "Eddies" this week that Mr. Hucks is probably the only man in the world who has seen two sunsets in one day.

This may be so, but he is not the first man, for on December 1st, 1783, MM. Charles and Robert Montgolfier made an ascent in a hydrogen balloon from the Tuileries, Paris. Later on, M. Charles made an ascent by himself. The sun had just set, and as he rose he saw it rise again, and on descending he witnessed a second setting.

Wishing every success to your excellent paper.
North Finchley, N.

K. J. KEY.

Activity at the Integral Works.

EXTREME pressure and activity is now going on at the Integral propeller works at Elthorne Road, Holloway, where the well-known Chauvière Integral propellers, which hold all the world's records, are manufactured under French licence. The works are going at full output to cope with the demand from all quarters.

IMPORTS AND EXPORTS, 1913-1914.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures, see FLIGHT, January 25th, 1912, and for 1912 and 1913, see FLIGHT for January 17th, 1914:—

	Imports.		Exports.		Re-Exportation.	
	1913.	1914.	1913.	1914.	1913.	1914.
January	12,097	5,945	4,005	210	1,510	879
February	17,361	28,132	3,447	106	690	441
March	20,425	27,731	1,924	1,934	1,042	1,440
April	15,593	11,384	5,524	1,175	1,413	1,473
May	31,241	17,062	3,726	4,059	830	9,484
June	14,905	15,967	1,408	5,082	1,106	142
July	14,469	15,548	3,812	4,994	1,250	1,695
	126,091	121,769	23,846	17,560	7,841	15,554

Aeronautical Patents Published.

Applied for in 1913.

15,871.	H. COANDA.	Arming aerial machines.
16,133.	J. A. STEINMETZ.	Apparatus for defending against aircraft.
16,316.	W. B. WRIGHT.	Non-slip pads for pedals.
16,499.	G. S. DODMAN.	Aerial vessels.
24,872.	R. BLACKBURN.	Fuselage of aeroplanes.
Published August 13th, 1914.		
16,973.	H. L. SHORT.	Aeroplanes.
21,034.	W. M. TAYLOR.	Aeroplanes.
21,270.	H. COANDA.	Flying machines.
21,686.	GES. FUR NAUTISCHE INSTRUMENTE.	Projecting missiles from aerial vessels.
Published August 20th, 1914.		
17,934.	N. BENOIS.	Flying machines with automatic stabilising devices.
24,756.	WM. BEARDMORE AND CO. AND R. S. HUBBARD.	Airships.

Applied for in 1914.

4,430.	U. VERNOT-DESROCHES.	Flying machines.
Published August 13th, 1914.		
544.	J. W. WULFFING.	Airship propelling and steering devices.
2,829.	A. BECCIANI.	Aeroplanes.
6,464.	CARL ZEISS.	Sighting instruments.

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